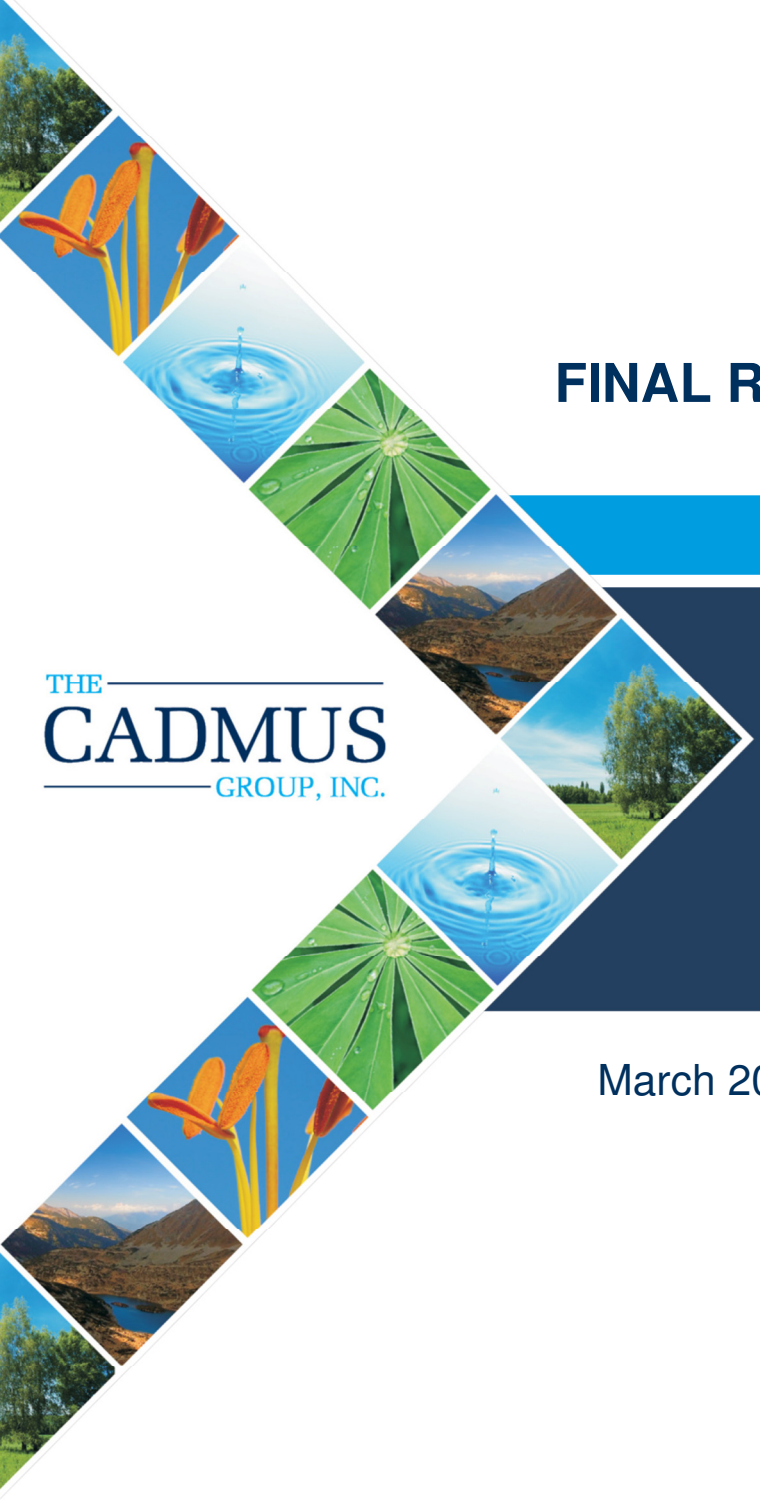

THE CADMUS GROUP, INC.

FINAL REPORT

Assessment of Long-Term, System-Wide Potential for Demand-Side and Other Supplemental Resources, 2013-2032 Volume II

March 2013

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DEFINITION OF TERMS

aMW	Average Megawatt
AC	Air Conditioning
C&I	Commercial and Industrial
CBECS	Commercial Building Energy Consumption Survey
CBSA	Commercial Building Stock Assessment
CHP	Combined Heat and Power
Council	Northwest Power and Conservation Council
CPP	Critical Peak Pricing
CSI	California Solar Initiative
DBB	Demand Buyback
DEER	Database of Energy Efficient Resources
DLC	Direct Load Control
DSM	Demand-side Management
EIA	Energy Information Administration
EISA	Energy Independence and Security Act of 2007
EPA	Environmental Protection Agency
EUIs	End-use Intensities
EUL	Effective Useful Life
FC	Fuel Cell
GT	Gas Turbine
HVAC	Heating Ventilation and Air Conditioning
IRP	Integrated Resource Plan
ITC	Investment Tax Credit (federal)
LCOE	Levelized Cost of Energy
LMOP	Landfill Methane Outreach Program
MT	Microturbine
MW	Megawatt
NEEA	Northwest Energy Efficiency Alliance
O&M	Operations and Maintenance
PV	Photovoltaic
RE	Reciprocating Engine
RECS	Residential Energy Consumption Survey
RTF	Regional Technical Forum
RTP	Real-time Pricing
RUL	Remaining Useful Life
SEEM	Simple Energy and Enthalpy Model
SGIP	Self-Generation Incentive Program
SWH	Solar Water Heating

TES	Thermal Energy Storage
TOU/TOD	Time of Use/Time of Day
TRC	Total Resource Cost
UCT	Utility Cost Test
UEC	Unit Energy Consumption
WH	Water Heating
WHP	Waste Heat-to-Power
WWTF	Wastewater Treatment Facility

ACKNOWLEDGEMENTS

This study required compilation of a large amount of data from various sources, including several departments at PacifiCorp. It would be difficult to overstate the importance of the contributions PacifiCorp's staff made to this effort. The authors thank all of them for their assistance.

For their guidance and support, we also thank: Jeff Bumgarner, Director of Demand Side Management Planning and Development; Don Jones, Jr., Senior Program Manager; and Eli Morris, Program Manager. They offered invaluable insight and direction throughout the study's course, while allowing us to exercise our independent judgment and to maintain our objectivity. We thank Pete Warnken, Manager of Integrated Resource Planning, for his support in developing the supply curves for the 2013 IRP.

APPENDIX A

APPENDIX A-1. SECONDARY SOURCES

Cadmus reviewed many data sources to determine inputs most appropriate for the Class 1 and Class 3 DSM analyses. Table A-1.1 provides the citations and links, where available, for these sources.

Table A-1.1 Class 1 and Class 3 DSM Secondary Sources

Source	Website Link	Program
Braithwait, Stephen D., Daniel G. Hansen, and Jess D. Reaser. *2010 Load Impact Evaluation of California Statewide Demand Bidding Programs (DBP) for Non-Residential Customers: Ex Post and Ex Ante Report; CALMAC Study ID SCE0298.01.* Christensen Associates Energy Consulting, LLC, March 29, 2011.	http://www.calmac.org/publications/PY10_DBP_Ex_Post_Ex_Ante_Report_Final.pdf	Demand Buy-Back
Braithwait, Stephen D., Daniel G. Hansen, and Jess D. Reaser. *2011 Load Impact Evaluation of California Statewide Demand Bidding Programs (DBP) for Non-Residential Customers: Ex Post and Ex Ante Report; CALMAC Study ID SCE0317.* Christensen Associates Energy Consulting, LLC, May 29, 2012.	http://www.calmac.org/publications/DBP_Statewide_Progarm_Year_2011_Load_Impact_Study.pdf	Demand Buy-Back
Braithwait, Stephen D., Daniel G. Hansen, and David A. Armstrong. *2010 Load Impact Evaluation of California Statewide Aggregator Demand Response Programs: Ex Post and Ex Ante Report; Study ID SCE0295.01.* Christensen Associates Energy Consulting, LLC, March 29, 2011.	http://www.calmac.org/publications/PY10_Aggregator_Ex_Post_Ex_Ante_Report.pdf	Nonresidential Load Curtailment
Brattle Group, The, Freeman, Sullivan & Co., and Global Energy Partners, LLC. *A National Assessment of Demand Response Potential: Staff Report.* Federal Energy Regulatory Commission, June 2009.	http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf	All programs
CenterPoint Energy Houston Electric. *"EnergyShare 2012" Program Manual.* November 7, 2011.	http://www.centerpointenergy.com/services/electricity/business/energyefficiencyprograms/loadmanagementstandardoffer/	Nonresidential Load Curtailment
Faruqui, Ahmad, Ryan Hledik, and Jenny Palmer. *WECC 20-year Demand Response Forecast.* The Brattle Group, Inc., June 19, 2012.	http://www.westgov.org/sptsc/workgroups/dsmwg/documents/2012/06-20-12WECCdrf.pdf	Residential and Small Commercial DLC
George, Steven S., Josh Bode, and Dries Berghman. *2011 Statewide Evaluation of California Aggregator Demand Response Programs, Volume II: Baseline Calculation Rules and Accuracy.* Freeman, Sullivan & Co., June 1, 2012.	http://www.calmac.org/publications/Aggregator_Statewide_Program_Year_2011_Baseline_Evaluation_Volume_II_.pdf	Nonresidential Load Curtailment

Source	Website Link	Program
George, Steven S., Josh Bode, and Elizabeth Hartmann. *2010 Load Impact Evaluation of Pacific Gas and Electric Company's Time-Based Pricing Tariffs: Final Report.* Freeman, Sullivan & Co., April 1, 2011.	http://fscgroup.com/reports/pge-2010-residential-pricing-programs-evaluation.pdf	Residential Time-of-Use
George, Steven S., Josh Bode, Josh Schellenberg, and Sam Holmberg. *2010 California Statewide Non-Residential Critical Peak Pricing Evaluation.* Freeman, Sullivan & Co., April 1, 2011.	http://www.calmac.org/publications/CPP_Statewdie_Program_Year_2011_Load_Impact_Study.pdf	Nonresidential Critical-Peak Pricing
George, Steven S., Josh Bode, Mike Perry, and Zach Mayer. *2009 Load Impact Evaluation for Pacific Gas and Electric Company's Residential SmartRate™ – Peak Day Pricing and TOU Tariffs and SmartAC Program: Volume 1: Ex Post Load Impacts, Final Report*. Freeman, Sullivan & Co., April 1, 2010.	http://www.calmac.org/publications/2009_PGE_SmartRate_SmartAC_and_Residential_TOU_Evaluation_Final_-_Volume_I_(Ex-Post).pdf	Residential Time-of-Use
Haeri, Hossein, et al. *Analysis of the Load Impacts and Economic Benefits of the TOU Rate Option.* Quantec, LLC., March 31, 2005.	N/A	Residential Time-of-Use
Hartmann, Elizabeth, Dries Berghman, Michael Perry, Josh Bode, and Stephen George. *2011 Ex Post Load Impact Evaluation of Pacific Gas and Electric Company's Residential Time-based Pricing.* Freeman, Sullivan & Co., March 29, 2012.	http://fscgroup.com/reports/2011-pge-residential-time-varying-pricing-programs-evaluation.pdf	Residential Time-of-Use
Idaho Power Company. *Irrigation Service Time-of-Use Pilot Program: Final Report.* February 4, 2003.	N/A	Irrigation Time-of-Use
Itron Inc. *A Measurement and Evaluation Study of PY 2007 Business Energy Coalition Program and PY 2005-07 Special Projects Group Program: Final Report and Appendices A-F.* October 30, 2008.	http://www.calmac.org/publications/BEC_2007_Final.pdf	Nonresidential Load Curtailment
Nelson, Jonathan, and Rachel Reiss Buckley. "Hot or Not? DLC Program Benchmarking: Results from the 2012 E Source Direct Load Control Program Study." *Focus Report, EDRP-F-41.* August 16, 2012.	http://www.slideshare.net/E_Source/direct-load-control-program-benchmarks	Residential and Small Commercial DLC
Ochsner, Heidi, et al. *Kootenai DR Pilot Evaluation: Full Pilot Report: Final Report.* The Cadmus Group, Inc., December 28, 2011.	http://www.bpa.gov/energy/n/Smart_Grid-Demand_Response/Demand_Response/Residential/Final%20Evaluation%20Report%20for%20KEC%20Peak%20Project_28Dec11.pdf	Residential and Small Commercial DLC
Owen Electric. "Simple Saver." Accessed at http://www.owenelectric.com/content/ simple-saver on November 6, 2011.	http://www.owenelectric.com/content/simple-saver	Residential and Small Commercial DLC

Source	Website Link	Program
PJM. *Load Management Performance Report 2009/2010.* December 2009.	http://www.pjm.com/markets-and-operations/demand-response/~/media/markets-ops/dsr/load-management-performance-report-2009-2010.ashx	Nonresidential Load Curtailment
PJM. *Load Management Performance Report 2010/2011.* December 2010.	http://www.pjm.com/markets-and-operations/demand-response/~/media/markets-ops/dsr/load-management-performance-report-2010-2011.ashx	Nonresidential Load Curtailment
PJM. *Load Management Performance Report 2011/2012.* December 2011.	http://www.pjm.com/markets-and-operations/demand-response/~/media/markets-ops/dsr/load-management-performance-report-2011-2012.ashx	Nonresidential Load Curtailment
Quantum Consulting Inc and Summit Blue Consulting, LLC. *Evaluation Of 2005 Statewide Large Nonresidential Day-Ahead And Reliability Demand Response Programs: Final Report.* April 28, 2006.	http://www.calmac.org/publications/2006-04-28_WG2_2005_FINAL_REPORT.pdf	Nonresidential Critical-Peak Pricing
Rocky Mountain Power. *2011 Annual Energy Efficiency and Peak Reduction Report – Utah.* April 27, 2012.	http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Demand_Side_Management/UT_2011_Annual_Report.pdf	Residential and Small Commercial DLC, Irrigation DLC
Rocky Mountain Power. *2011 Energy Efficiency and Peak Reduction Annual Report – Idaho.* May 24, 2012.	http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Demand_Side_Management/ID_2011_Annual_Report_Appendix.pdf	Irrigation DLC
Stewart, Jim, Hossein Haeri and Brian Hedman. *Impacts of Rocky Mountain Power's Idaho Irrigation Load Control Program.* The Cadmus Group, Inc., March 24, 2011.	N/A	Irrigation DLC

APPENDIX A-2. SUPPLY CURVES

The system-wide and state-specific Class 1 and Class 3 DSM supply curves are shown below. The supply curves display each resource's estimated 20-year market potential at or below a particular per-unit cost; note that the potential shown in the supply curves does not account for any interaction between competing programs within or across resource classes.

Cumulative savings within each class of DSM was created by summing the 20-year market potential of that class' programs along the horizontal axis sequentially, in the order of their levelized, per-unit costs. System-wide levelized costs are calculated as the weighted average across all states. Figure A-2.1 through Figure A-2.7 show the Class 1 DSM supply curves, with the system-wide curve shown first, followed by the Pacific Power states (California, Oregon, and Washington) and then the Rocky Mountain Power states (Idaho, Utah, and Wyoming). Figure A-2.8 through Figure A-2.14 show the Class 3 DSM supply curves, following the same organization as the Class 1 DSM curves.

The Class 1 DSM supply curves for all states present the residential and small commercial DLC air conditioning and water heater components as a single program option, with the levelized cost representing the weighted average of the separate program component (residential, small commercial, air conditioning, water heat). This approach was used to recognize the dependencies between the program components (i.e., it is impractical to offer a standalone water heating DLC program).

Figure A-2.1. Class 1 DSM: System-Wide Supply Curve (Cumulative MW in 2032)

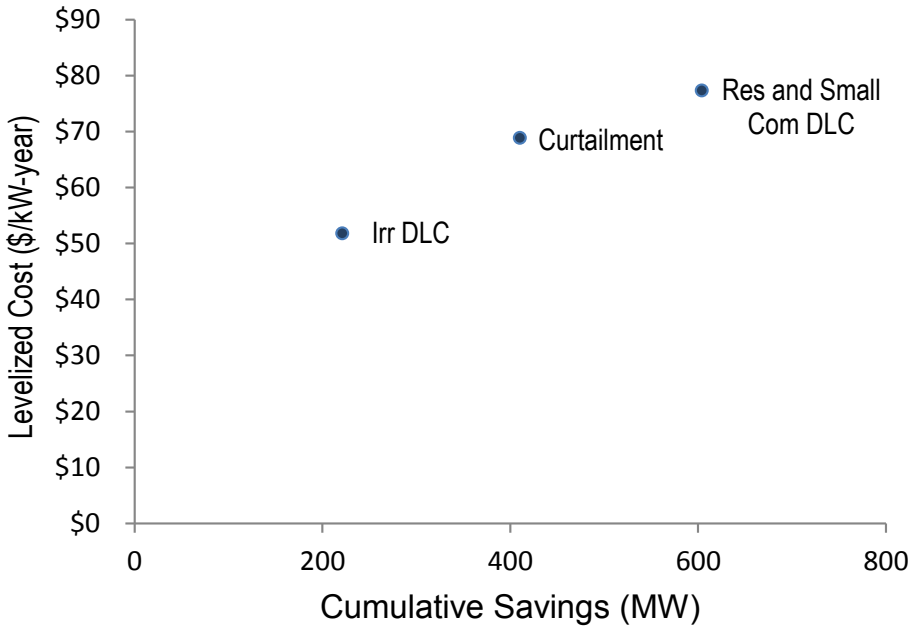


Figure A-2.2. Class 1 DSM: California Supply Curve (Cumulative MW in 2032)

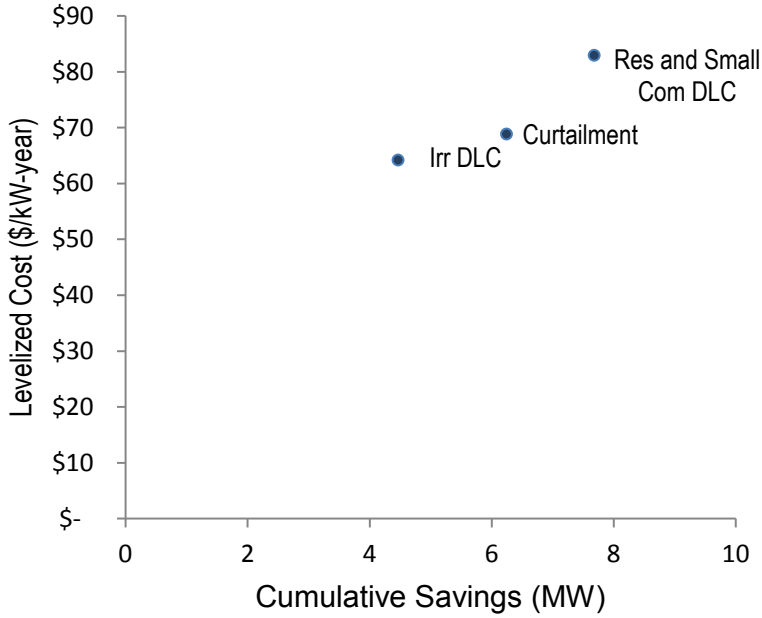


Figure A-2.3. Class 1 DSM: Oregon Supply Curve (Cumulative MW in 2032)

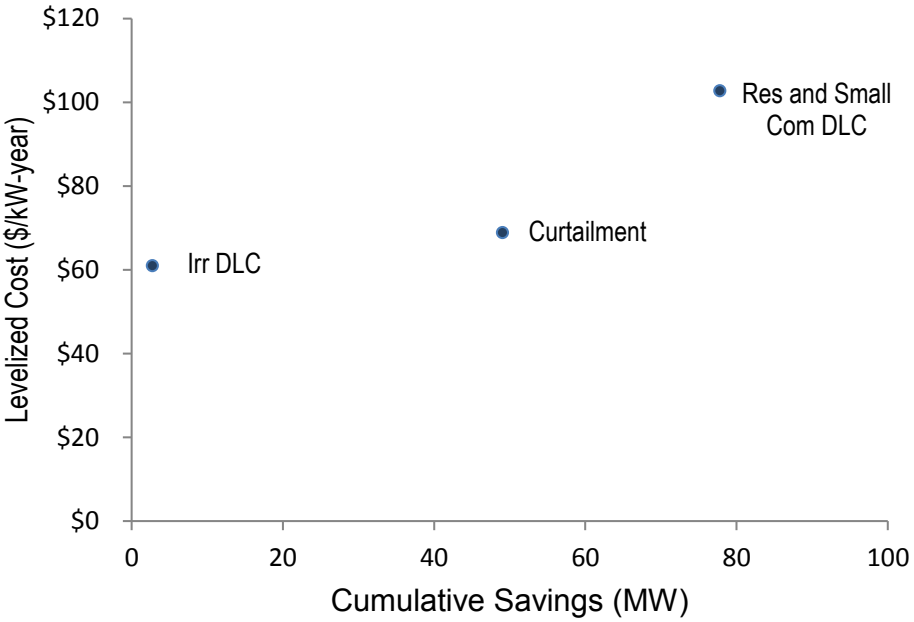


Figure A-2.4. Class 1 DSM: Washington Supply Curve (Cumulative MW in 2032)

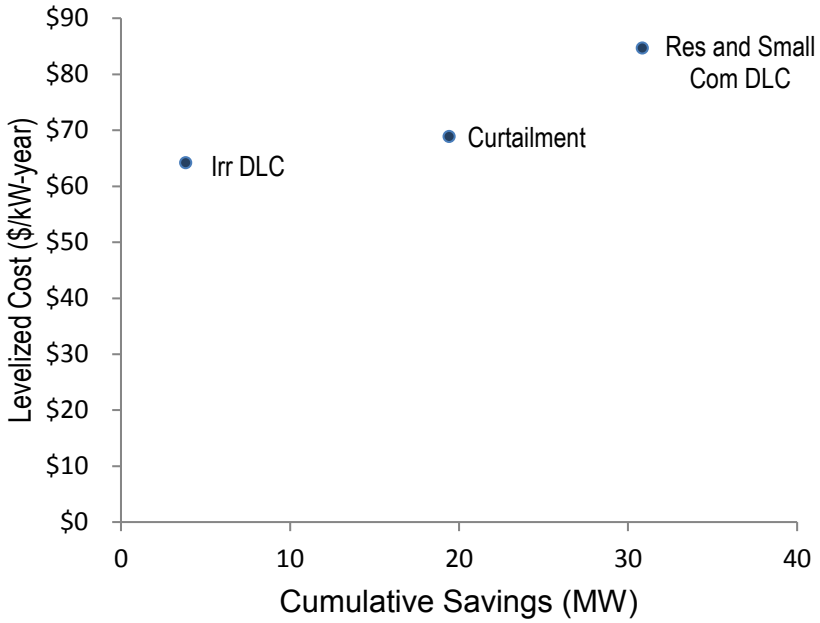


Figure A-2.5. Class 1 DSM: Idaho Supply Curve (Cumulative MW in 2032)

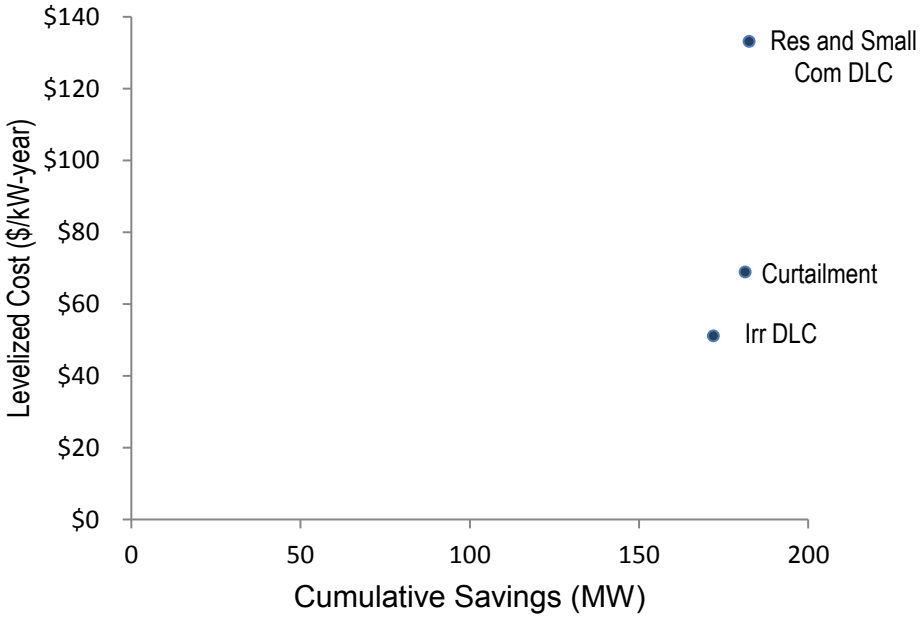


Figure A-2.6. Class 1 DSM: Utah Supply Curve (Cumulative MW in 2032)

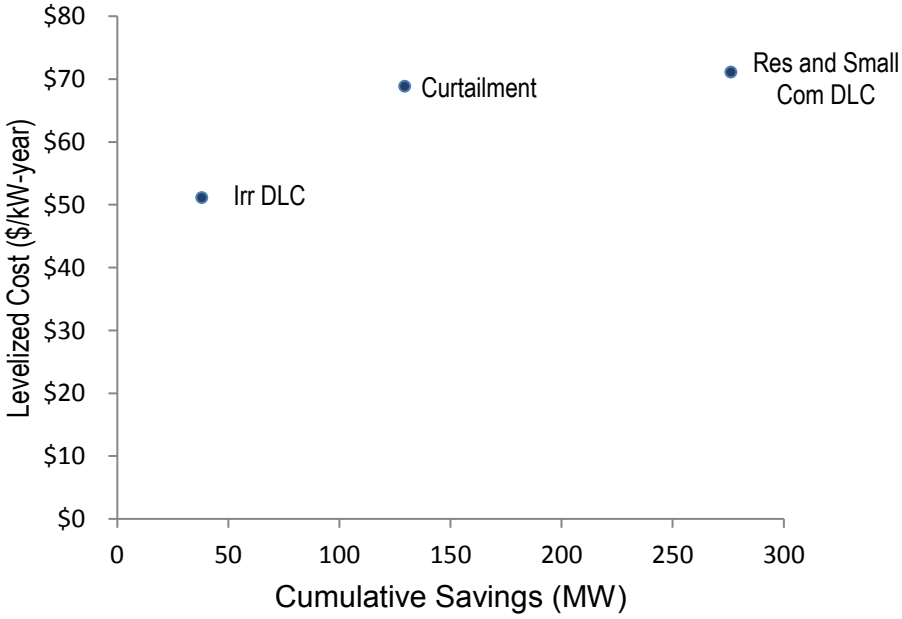


Figure A-2.7. Class 1 DSM: Wyoming Supply Curve (Cumulative MW in 2032)

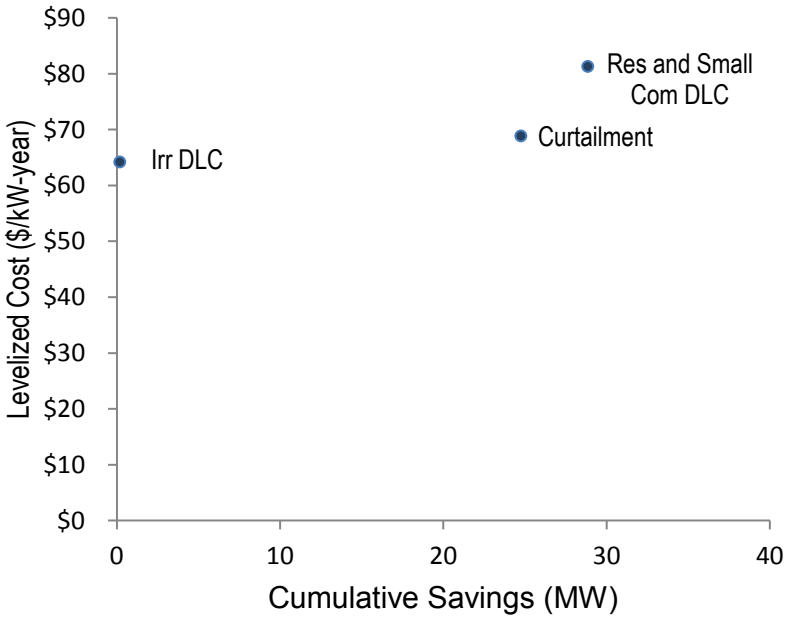


Figure A-2.8. Class 3 DSM: System-Wide Supply Curve (Cumulative MW in 2032)

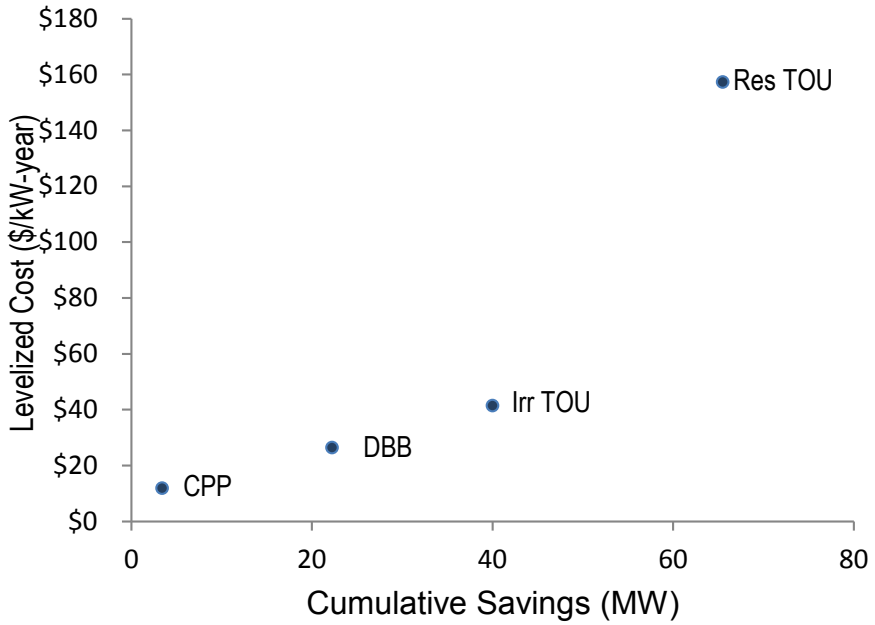


Figure A-2.9. Class 3 DSM: California Supply Curve (Cumulative MW in 2032)

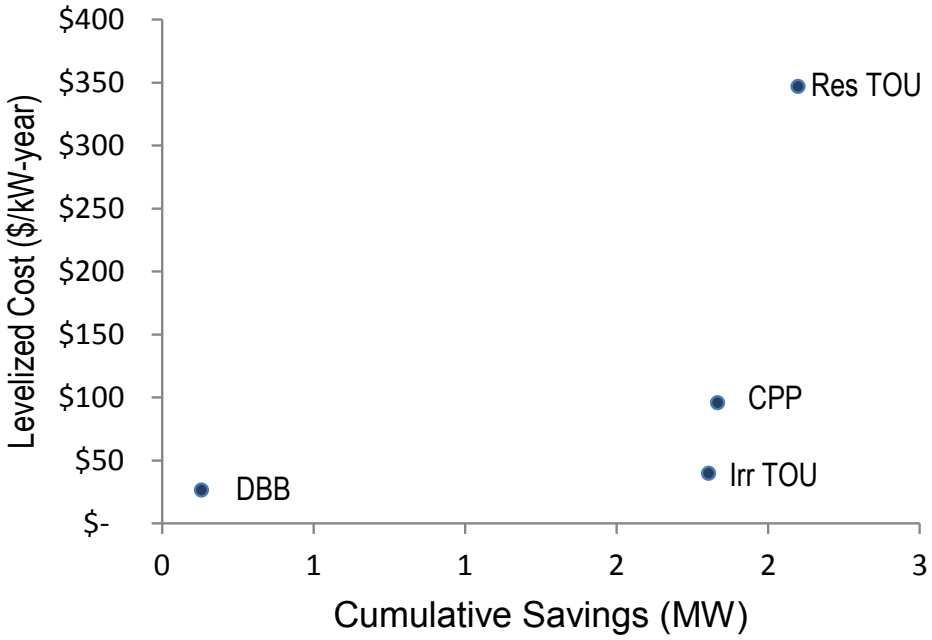


Figure A-2.10. Class 3 DSM: Oregon Supply Curve (Cumulative MW in 2032)

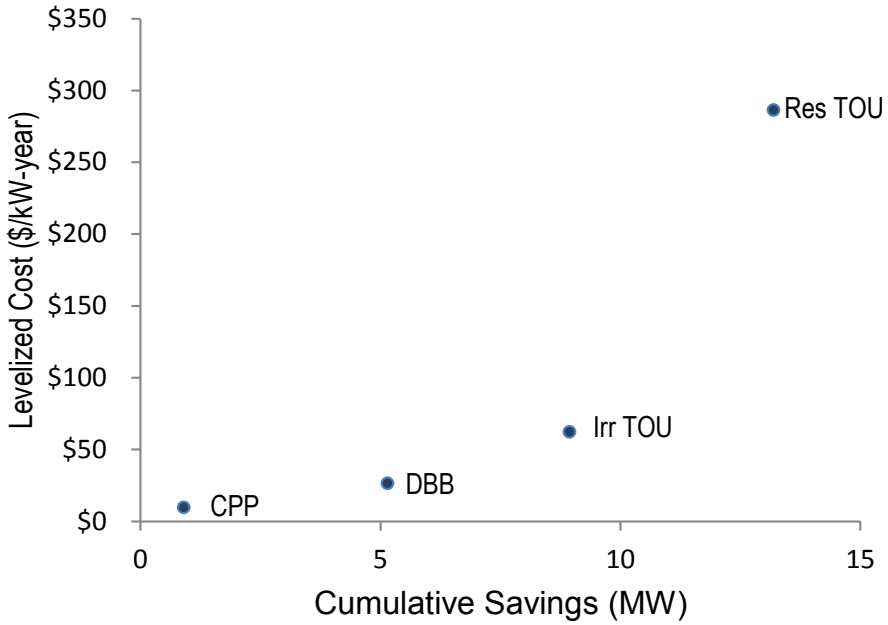


Figure A-2.11. Class 3 DSM: Washington Supply Curve (Cumulative MW in 2032)

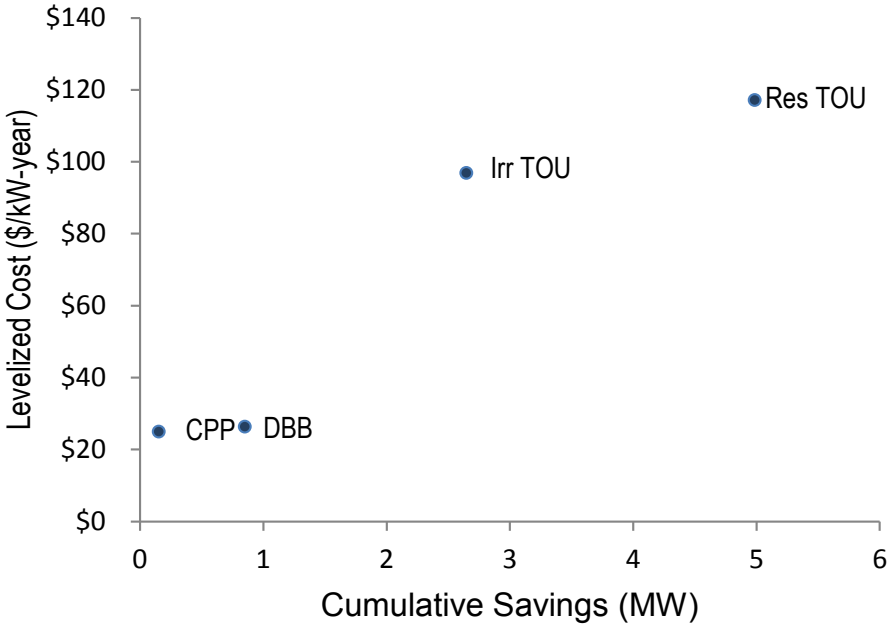


Figure A-2.12. Class 3 DSM: Idaho Supply Curve (Cumulative MW in 2032)

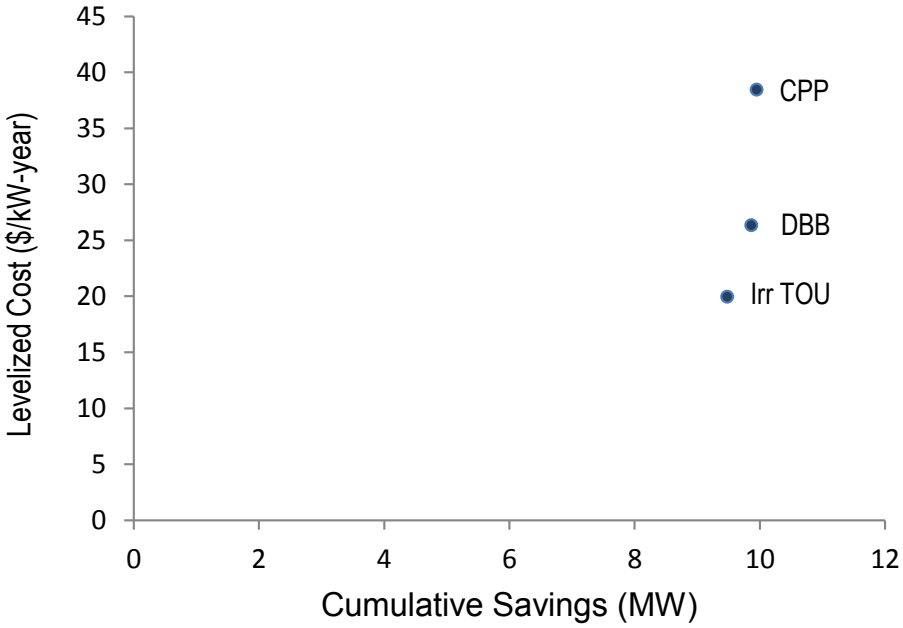


Figure A-2.13. Class 3 DSM: Utah Supply Curve (Cumulative MW in 2032)

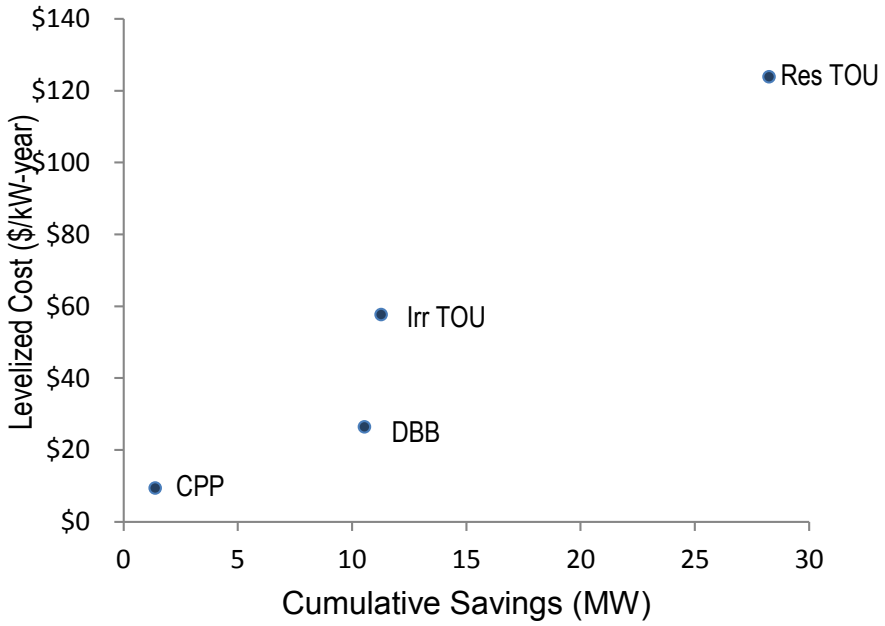
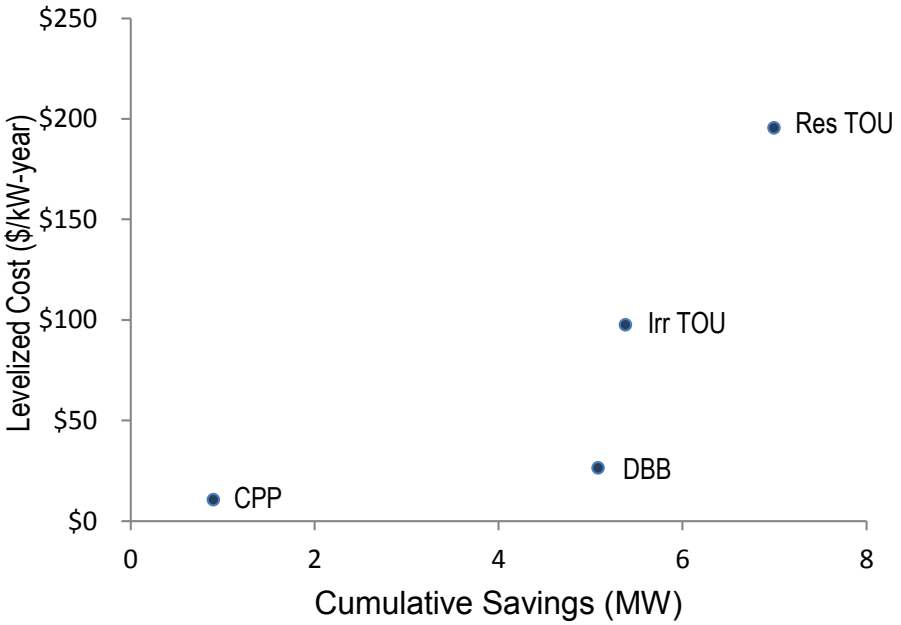


Figure A-2.14. Class 3 DSM: Wyoming Supply Curve (Cumulative MW in 2032)



APPENDIX A-3. RESIDENTIAL AND SMALL COMMERICAL DLC AC PROGRAM ASSUMPTIONS AND CALCULATIONS

As described in Volume 1 of this report, Residential and Small Commercial DLC proves unique in that, unlike other demand response options, it affects specific end uses and equipment (e.g., air conditioners). Therefore, market potential was calculated as the product of four variables:

1. Number of customers.
2. Expected per unit (kW) impacts.
3. Equipment saturation rate.
4. Expected participation.

Customer Eligibility

Customers must have a central air conditioning unit (including heat pumps, but not evaporative coolers) to participate in the AC portion of the program, while those who participate in the water heat portion of the program must have both a central air conditioning unit and an electric water heater.

All residential customers with qualifying equipment are eligible to participate. Commercial customers in the small office segment (maximum monthly demand of less than 100 kW)[1] or small retail segment (maximum monthly demand of less than 33 kW)[2] are also eligible to participate.

Derivation of Per-Unit Impacts

PacifiCorp already operates a large DLC program in its Utah service area. Measurement of program impacts has shown an average reduction of 1 kW per unit. Indexing per-unit impacts to Utah allowed estimation of per-unit impacts for other PacifiCorp service jurisdictions using the following procedure.

As PacifiCorp system peaks correlate highly to Utah weather, the average temperature for a representative location in each state was calculated during Utah's 50 hottest hours, based on TMY3 (typical meteorological year) hourly data. Manual J, the protocol used to size air conditioning equipment, was used to derive equipment design temperatures (the top 1%) for each state and equipment capacities derived from the Simple Energy Enthalpy Model (SEEM) runs completed for the Class 2 DSM analysis. The study adjusted the 1 kW impact per switch used in Utah by the ratio of system peak to design temperature and air conditioner capacity; per switch kW impacts for the other five states were estimated.

[1] The 100 kW threshold is used as a proxy for PacifiCorp's FinAnswer's program's 20,000 square foot cutoff for eligible customers as determined for the 2007 and 2011 Assessment.

[2] Thirty-three kW represents average demand for retail customers as determined for the 2007 and 2011 Assessment.

Table A-3.1 shows the assumptions used to adjust the savings per switch (kW at the meter) for the DLC AC program. Per-switch impacts for small commercial customers are 25% greater than the kW impacts in the table below because it is assumed that small commercial customers, who have larger cooling units, will shed more load during program events.

Table A-3.1 Residential DLC AC Program: Impact per Switch Adjustments

State	City	Design Temp. (F°)[a]	Average Temp. During Top 50 UT Hours (F°)[b]	Cooling Degree Days[c]	System Peak to Design Temp. Ratio[d]	AC Capacity Ratio[e]	Adjustment[f]	kW per Switch
California	Yreka	95	83	550	0.88	0.87	0.76	0.74
Idaho	Idaho Falls	89	86	322	0.96	0.45	0.44	0.43
Oregon	Portland	88	75	280	0.85	0.69	0.59	0.58
Utah	Salt Lake City	95	97	1,066	1.02	1.00	1.02	1.00
Washington	Yakima	92	79	431	0.86	0.91	0.77	0.76
Wyoming	Casper	91	90	428	0.99	0.87	0.86	0.84

[a] Manual J equipment design temperatures (top 1%) from ASHRAE 2009 design conditions.
[b] TMY3 hourly data were used to determine the average temperature in each state during the 50 hottest hours in Utah.
[c] Cooling degree days from the residential Simple Energy and Enthalpy Model (SEEM) v94 models used in the Class 2 DSM analysis.
[d] The ratio of the average temperature during the 50 hottest hours in Utah to the Design Temperature.
[e] The ratio of the assumed tonnage in each state to Utah's tonnage. Tonnages are from the SEEM v94 models.
[f] The product of the Percent of the System Peak of Design Temperature Ratio and the AC Capacity Ratio.

Program Calculations

Table A-3.2 shows calculations for the Residential DLC program. Variables are listed by state and include the number of residential customers, percent eligible for the program, participation rate, impact per switch and market potential in 2032. Table A-3.3 shows the calculations for the Small Commercial component of the program. It is important to note that the per-switch impacts have been adjusted to reflect kW savings at the generator; therefore the kW impacts shown in Table A-3.2 are greater than those in A-3.1.

Table A-3.2. Program Calculations - Residential DLC AC and WH Program

State	Customers in 2032	Customers with Eligible Cooling Equipment (%)	Percentage of Customers with Eligible Cooling Equipment who have Electric Water Heating (%)	20-Year Program Participation (%)	Impact per Switch Cooling (kW)	Impact per Switch Water Heat (kW)	Market Potential Cooling (MW)	Market Potential Water Heat (MW)
California	36,444	24%	76%	12.5%	0.84	0.56	0.9	0.5
Oregon	512,981	45%	60%	12.5%	0.64	0.56	18.4	9.6
Washington	108,323	69%	66%	12.5%	0.84	0.55	7.9	3.4
Idaho	79,767	17%	36%	12.5%	0.48	0.56	0.8	0.3
Utah	835,001	58%	10%	26.0%	1.10	0.55	138.9	6.9
Wyoming	121,655	24%	25%	12.5%	0.93	0.55	3.4	0.5

Table A-3.3. Program Calculations – Small Commercial DLC AC and WH Program

State	Small Office Customers in 2032	Small Retail Customers in 2032	Small Office Customers with Eligible Cooling Equipment (%)	Small Retail Customers with Eligible Cooling Equipment (%)	Percentage of Small Office Customers with Eligible Cooling Equipment who have Electric Water Heating (%)	Percentage of Small Retail Customers with Eligible Cooling Equipment who have Electric Water Heating (%)	20-Year Program Participation (%)	Impact per Switch Cooling (kW)	Impact per Switch Water Heat (kW)	Market Potential Cooling (MW)	Market Potential Water Heat (MW)
California	1,716	390	44%	46%	93%	70%	3.5%	1.0	0.6	0.03	0.02
Oregon	18,814	7,362	75%	53%	57%	68%	3.5%	0.8	0.6	0.5	0.2
Washington	3,103	1,095	83%	57%	67%	79%	3.5%	1.0	0.6	0.1	0.04
Idaho	1,955	575	73%	37%	36%	33%	3.5%	0.6	0.6	0.03	0.01
Utah	17,511	7,783	78%	66%	21%	26%	3.5%	1.4	0.5	0.9	0.1
Wyoming	4,174	1,565	71%	52%	27%	26%	3.5%	1.2	0.5	0.2	0.02

APPENDIX A-4. PROGRAM CALCULATIONS

Table A-4.1 through A.4-6 show the load basis, eligibility assumptions, participation rates, and the estimated potential in 2032 for all programs except the Residential and Small Commercial DLC programs, as these are shown in Appendix A-3. The market potential as well as the load basis, which represents the estimated average demand for applicable customer segments during hours targeted by each program, is shown at generation. Class 1 DSM resources are listed first, followed by Class 3 DSM resources.

Table A-4.1 Program Calculations – Irrigation DLC

State	Load Basis (MW in 2032)	Load Class Eligibility (%)	Technical Potential (%)	20-Year Program Participation (%)	Event Participation (%)	Market Potential (MW)
California	41.3	50%	92%	25%	94%	4.5
Oregon	100.1	25%	78%	15%	94%	2.8
Washington	43.6	50%	75%	25%	94%	3.8
Idaho	234.7	100%	100%	78%	94%	172.0
Utah	52.1	100%	100%	78%	94%	38.2
Wyoming	6.9	25%	82%	15%	94%	0.2

Table A-4.2 Program Calculations – Nonresidential Load Curtailment

State	Load Basis Industrial (MW in 2032)	Load Basis Commercial (MW in 2032)	Load Class Eligibility Industrial (%)	Load Class Eligibility Commercial (%)	Technical Potential (%)	20-Year Program Participation Industrial (%)	20-Year Program Participation Commercial (%)	Event Participation (%)	Market Potential Industrial (MW in 2032)	Market Potential Commercial (MW in 2023)	Market Potential Total (MW in 2032)
California	4.0	63.6	58.3%	36.3%	30%	25%	25%	95%	0.2	1.6	1.8
Oregon	350.6	1,431.9	86.2%	45.7%	30%	17%	17%	95%	14.6	31.7	46.3
Washington	124.9	252.7	70.8%	42.3%	30%	28%	28%	95%	7.1	8.5	15.6
Idaho	272.7	129.6	62.2%	38.6%	30%	15%	15%	95%	7.2	2.1	9.4
Utah	1,517.4	2,165.2	79.3%	58.4%	30%	13%	13%	95%	44.6	46.9	91.4
Wyoming	1,304.1	441.8	70.2%	50.0%	30%	7%	10%	95%	18.3	6.3	24.6

Table A-4.3 Program Calculations – Residential TOU

State	Load Basis (MW in 2032)	Load Class Eligibility (%)	Technical Potential (%)	20-Year Program Participation (%)	Event Participation (%)	Market Potential (MW)
California	59.1	100%	9%	5%	100%	0.3
Oregon	946.0	100%	9%	5%	100%	4.3
Washington	292.6	100%	16%	5%	100%	2.3
Idaho	104.0	100%	16%	0%	100%	-
Utah	2,122.8	100%	16%	5%	100%	17.0
Wyoming	201.8	100%	16%	5%	100%	1.6

Table A-4.4 Program Calculations – Irrigation TOU

State	Load Basis (MW in 2032)	Load Basis (MW in 2032)	Load Class Eligibility (%)	Technical Potential (%)	20-Year Program Participation (%)	Event Participation (%)	Market Potential (MW)
California	36.6	41.3	100%	30%	13.5%	100%	1.7
Oregon	91.1	101.1	100%	30%	12.5%	100%	3.8
Washington	40.1	44.4	100%	30%	13.5%	100%	1.8
Idaho	207.4	234.2	100%	30%	13.5%	100%	9.5
Utah	47.6	52.4	100%	30%	4.5%	100%	0.7
Wyoming	6.6	7.3	100%	30%	13.5%	100%	0.3

Table A-4.5 Program Calculations – Nonresidential CPP

State	Load Basis Industrial (MW in 2032)	Load Basis Commercial (MW in 2032)	Load Class Eligibility Industrial (%)	Load Class Eligibility Commercial (%)	Technical Potential (%)	20-Year Program Participation Industrial (%)	20-Year Program Participation Commercial (%)	Event Participation (%)	Market Potential Industrial (MW in 2032)	Market Potential Commercial (MW in 2023)	Market Potential Total (MW in 2032)
California	3.9	63.2	37.1%	20.5%	5%	4.0%	4.0%	100%	0.0	0.0	0.0
Oregon	346.7	1,396.7	72.4%	30.3%	5%	2.7%	2.7%	100%	0.3	0.6	0.9
Washington	122.2	260.1	33.0%	10.6%	5%	4.5%	4.5%	100%	0.1	0.1	0.2
Idaho	261.2	129.0	18.0%	17.3%	5%	2.4%	2.4%	100%	0.1	0.0	0.1
Utah	1,490.9	2,218.3	57.3%	21.2%	5%	2.1%	2.1%	100%	0.9	0.5	1.4
Wyoming	1,291.5	454.8	49.6%	24.2%	5%	2.4%	2.4%	100%	0.8	0.1	0.9

Table A-4.6 Program Calculations – Nonresidential DBB

State	Load Basis Industrial (MW in 2032)	Load Basis Commercial (MW in 2032)	Load Class Eligibility Industrial (%)	Load Class Eligibility Commercial (%)	Technical Potential (%)	20-Year Program Participation Industrial (%)	20-Year Program Participation Commercial (%)	Event Participation (%)	Market Potential Industrial (MW in 2032)	Market Potential Commercial (MW in 2023)	Market Potential Total (MW in 2032)
California	3.9	62.1	37.1%	20.5%	7%	13%	13%	100%	0.0	0.1	0.1
Oregon	346.7	1,396.7	72.2%	30.3%	7%	9%	9%	100%	1.6	2.7	4.2
Washington	121.2	256.2	33.0%	10.6%	7%	15%	15%	100%	0.4	0.3	0.7
Idaho	258.7	126.2	18.1%	17.2%	7%	8%	8%	100%	0.3	0.1	0.4
Utah	1,481.3	2,166.0	57.3%	21.2%	7%	10%	10%	100%	5.9	3.2	9.2
Wyoming	1,286.8	445.0	49.8%	24.1%	7%	8%	8%	100%	3.6	0.6	4.2

APPENDIX A-5. INTERACTIVE EFFECTS

While the results presented in Volume 1 of this report do not adjust potential for competition between Class 1 and 3 DSM options, the assessment considered interactions within and between Class 1 and Class 3 DSM resources to avoid overstating potential impacts in integrated resource planning (Table A-5.1). Resources were prioritized within each customer sector by the firmness of the resource and then by cost. That is, Class 1 DSM was given priority over competing Class 3 DSM options, and thus, its market potential is unaffected by this analysis as there were no competing Class 1 DSM options. The following logic allowed potential adjustments to account for these interactions:

- ***Residential:*** The Cadmus team assumed participation in the DLC air conditioning and water heating programs would take precedence over TOU rates. Customers already enrolled in the DLC program would not opt out to participate in the TOU program.
- ***Small Commercial:*** As small commercial only had one product, the study did not consider interactive effects.
- ***Large Commercial and Industrial:*** The Cadmus team assumed all available potential would likely be captured by the nonresidential load curtailment program, and no remaining potential would be available for Demand Buyback (DBB) or CPP where load curtailment is offered.
- ***Irrigation:*** The Cadmus team's analysis indicated current programs in Idaho and Utah have exhausted the market potential in this sector for those states; therefore, no potential remains for the TOU program. For the remainder of the states, the Cadmus team adjusted TOU program participation to account for interactions with the irrigation DLC opportunities.

As shown in Table A-5.1, these interactive effects decrease the system-wide 2032 market potential from 670 MW to 621 MW. Because firmness was the primary prioritization criterion and as there were no competing Class 1 DSM options, the Class 1 DSM market potential is unaffected by this interactive analysis. However, Class 3 DSM market potential decreased from 66 MW to 17 MW as a result of these considerations.

Table A-5.1. Market Potential (MW in 2032) with Interactive Effects by State

Resource Class	Program	Pacific Power			Rocky Mountain Power			System (with interactions)	System (without interactions)
		C	O	W	I	U	WY		
Class 1	DLC Air Conditioning	1	19	8	1	140	4	172	172
	DLC Water Heat	0.5	10	3	0.4	7	1	22	22
	Irrigation Load Control	4	3	4	172	38	0.2	221	221
	Load Curtailment	2	46	16	9	91	25	189	189
	Subtotal	**8**	**78**	**31**	**183**	**276**	**29**	**604**	**604**
Class 3	Demand Buyback	0	0	0	0	0	0	0	19
	Residential TOU	0.2	2	1	-	7	1	12	25
	Irrigation TOU	1	2	1	0	0	0.2	5	18
	Critical-Peak Pricing	0	0	0	0	0	0	0	3
	Subtotal	**1**	**5**	**2**	**0**	**7**	**1**	**17**	**66**
Class 1 and 3	**Total**	**9**	**83**	**33**	**183**	**283**	**30**	**621**	**670**

APPENDIX B

APPENDIX B-1. RESIDENTIAL MEASURE DESCRIPTIONS

Residential measures can be categorized as retrofit or equipment measures.

Residential Retrofit Measure Descriptions

Heating and Cooling

Construction—ICF. Building a concrete home with insulating concrete forms (ICFs) saves energy. The greater insulation, tighter construction, and temperature-moderating mass of the walls conserve heating and cooling energy much more effectively than conventional wood-frame walls.

Construction—SIP. Structural insulated panels (SIPs) use continuous foam insulation throughout the panel, providing excellent energy efficiency and low air infiltration levels. The baseline is standard wood framing.

Cool Roofs. ENERGY STAR®-qualified cool roofs, with reflective coatings, can lower roof surface temperatures by up to 100ºF, thereby decreasing amounts of heat transferred into a building. Cool roofs can help reduce amounts of air conditioning needed in buildings, and can reduce peak cooling demand by 10% to 15%.[1]

Doors. Composite or steel doors with a foam core increase overall insulation, slowing heat loss. This measure includes adding a thermal door with resistance values listed in Table B-1.1.

Table B-1.1. Door R-Value Comparison

Measure Insulation	Baseline Insulation
R-10 (Above CA Code)	R-2.6 (CA Code)
R-5 (Above CA Code)	R-2.6 (CA Code)
R-10 (Above ID, WY, & UT Code)	R-2.9 (ID, WY, & UT Code)
R-5 (Above ID, WY, & UT Code)	R-2.9 (ID, WY, & UT Code)
R-10 (Above WA Code - Multi Family Homes Only)	R-2.5 (WA Code - Multi Family Homes Only)
R-5 (Above WA Code - Multi Family Homes Only)	R-2.5 (WA Code - Multi Family Homes Only)
R-10 (Above WA Code - Single Family and Manufactured Homes Only)	R-5 (WA Code - Single Family and Manufactured Homes Only)
R-5 (WA Code - Single Family and Manufactured Homes Only)	R-2.5 (Below WA Code - Single Family and Manufactured Homes Only)

Duct Sealing and Insulation. Duct sealing and insulation cost-effectively save energy, improve air and thermal distribution (comfort and ventilation), and reduce cross contamination between different zones in buildings (i.e., smoking vs. non-smoking, bio-aerosols, localized indoor air pollutants). This measure assumes a baseline of existing duct conditions sealed and insulated to R-8 and R-11.

[1] http://www.aceee.org/consumer/cooling

Duct System Efficiency Upgrade—Ducts Inside. In many homes, ducts run through unconditioned areas, such as attics, garages, crawlspaces, and basements, for convenience and practical reasons. Ducts in unconditioned areas lose energy because of large temperature differences between conditioned air in the ducts and the surrounding space. Locating ducts in conditioned spaces helps to reduce wasted heat loss.[2]

Electronically Commutated Motor (ECM)—Air Conditioner/Electric/Gas Furnace ECM Fan and Air Source Heat Pump. ECMs are smaller, variable-speed motors that operate from a single-phase power source, which consumes less power than standard motors in ventilation and circulation systems. The baseline measure is a standard-efficiency motor.

Green Roof. The added mass and thermal resistance of green roofs reduce building heating and cooling loads. These systems reduce ambient temperatures around a roof, decreasing a building's urban heat island effect, reducing the ambient temperature of the roof's surface, and slowing the transfer of heat into the building, thus lowering cooling costs. They also provide added insulation to the roof structure, reducing heating requirements in winter.[3]

Heat Exchangers Air-to-Air. An air-to-air heat exchanger mechanically ventilates homes in colder climates. During winter, it transfers heat from air exhausted to fresh, outside air entering the home. Fifty percent to 80% of the heat normally lost in exhausted air returns to the house. Air-to-air heat exchangers can be installed as part of a central heating and cooling system, or in walls or windows. Wall and window-mounted units resemble air conditioners, and ventilate one room or an area.[4]

Infiltration Control. Sealing air leaks in windows, doors, roof, crawlspaces, and outside walls decreases overall heating and cooling losses. Filling gaps in windows with synthetic filler prevents drafts and heating/cooling loss. This measure represents a reduction in air exchanges per hour (ACH) of 0.1 ACH.

Insulation—Attic/Ceiling. This measure represents an increase in R-value. Adding insulation in existing buildings increases thermal performance, and brings the resistance value up to and past code, depending on vintage.

Table B-1.2 summarizes different resistance values compared in the measure.

[2] http://www.toolbase.org/pdf/techinv/ductsinconditionedspace_techspec.pdf

[3] http://www.toolbase.org/Technology-Inventory/Roofs/green-roofs

[4] http://cipco.apogee.net/res/reevhex.asp

Table B-1.2. Ceiling R-Value Comparison

Measure Insulation	Baseline Insulation
R-60 (Above CA, ID, & WY Code)	R-49 (CA, ID, & WY Code)
R-49 (CA & WY Code)	R-14 (Existing Insulation)
R-49 (ID Code)	R-15 (Existing Insulation)
R-49 (Above UT Code)	R-38 (UT Code)
R-38 (UT Code)	R-15 (Existing Insulation)
R-60 (Above WA Code—Single-Family and Manufactured Homes Only)	R-49 (WA Code—Single-Family and Manufactured Homes Only)
R-49 (WA Code—Single-Family and Manufactured Homes Only)	R-11 (Existing Insulation)
R-49 (Above WA Code—Multifamily Homes Only)	R-38 (WA Code—Multifamily Homes Only)
R-38 (WA Code—Multifamily Homes Only)	R-11 (Existing Insulation)

Insulation—Floor. Adding insulation to the floor increases the overall resistance value, slowing heat transfer from basements and crawl spaces to upper levels. Table B-1.3 summarizes different resistance values compared in the measure.

Table B-1.3. Floor R-Value Comparison

Measure Insulation	Baseline Insulation
R-38 (Above CA, ID, UT, & WA Code)	R-30 (CA, ID, UT, & WA Code)
R-30 (CA, ID, & UT Code)	R-1 (Existing Insulation)
R-30 (WA Code)	R-0 (Existing Insulation)
R-38 (Above WY Code)	R-21 (WY Code)
R-21 (WY Code)	R-0 (Existing Insulation)

Insulation—Slab (New Construction). Substantial heat can be lost through an uninsulated slab, resulting in cold, uncomfortable floors. Even if foundation walls have been insulated vertically under the slab, significant heat escapes from the slab edge closest to the cold outside air. This measure compares a slab insulated with R-15 insulation to a slab insulated to code R-10.

Insulation—Wall. Wall insulation slows the transfer of heat, and reduces heating and cooling loads in houses. Table B-1.4 compares different insulation levels.

Table B-1.4. Wall Insulation Measures

Measure Insulation	Baseline Insulation
R-13 (CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)
R-13 (Below UT & WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)
R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)
R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)
R-21 (Above CA Code- New Construction)	R-13 (CA Code)
R-13 (CA Code)	R-1 (Existing Insulation)
R-21 + R-5 Sheathing (Above ID Code- New Construction)	R-20 (ID Code)
R-20 (ID Code)	R-2 (Existing Insulation)
R-21 + R-5 Sheathing (Above UT Code)	R-19 (UT Code)
R-19 (UT Code)	R-1 (Existing Insulation)

Measure Insulation	Baseline Insulation
R-21 + R-5 Sheathing (Above WA Code – New Construction Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)
R-21 + R-6 Sheathing (Above WA Code – New Construction Multi Family Homes Only)	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)
R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)
R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)
R-21 + R-5 Sheathing (Above WY Code – New Construction)	R-19 (WY Code)
R-19 (WY Code)	R-1 (Existing Insulation)

Quality Installation—Heat Pump. Quality installation of a heat pump includes: proper sizing of equipment; and correct refrigerant charge and airflow. By properly sizing HVAC equipment rather than using "rules of thumb," a system load tool, such as Air Conditioning Contractors of America (ACCA) guidelines for sizing HVAC equipment (ACCA Manual J Residential Load Calculation), results in optimum equipment operating efficiency and better control.[5]

Radiant Barrier (Ceiling). Radiant barriers generally consist of a thin piece of aluminum installed in buildings to help reduce solar heat gain during summer, and to help trap heat during winter. These work by reducing heat transfers between air spaces of the roof deck and the attic floor.

Thermal Shell—Infiltration @ 0.2 ACH w/HRV (New Construction). Heat recovery ventilation (HRV) provides fresh air and improved climate control, while saving energy by reducing heating (or cooling) requirements. Combining this feature with better infiltration control (0.2 air changes per hour), minimizes the energy needed to maintain a healthy level of fresh air, and reduces heat loss due to air leakage.

Thermostat—Programmable. A programmable thermostat controls set point temperatures automatically, ensuring HVAC systems do not run during low-occupancy hours.

Tune-up—Air Conditioner and Air Source Heat Pump. Proper system tune-up/maintenance ensures refrigerant charges and airflows through evaporator coils are properly tested and correctly adjusted—two factors affecting system efficiency. Maintenance includes changing filters and cleaning coils to maintain the overall performance and efficiency of units.

Whole-House Fan. Draws cool outdoor air inside through open windows, and exhausts hot indoor air through the attic to the outside. A whole house fan provides a simple and inexpensive method of cooling a house when outdoor temperatures fall below indoor temperatures.

Window—Upgrade. This measure increases building performance by reducing U-values in existing and new construction windows, as shown in Table B-1.5**Error! Reference source not found.**.

[5] http://www.toolbase.org/Technology-Inventory/HVAC/hvac-sizing-practice

Table B-1.5. High-Efficiency Window Measures

Measure Insulation	Baseline Insulation
0.38 (CA Code)	Existing - Single Pane
0.30 (Above CA Code)	0.38 (CA Code)
0.25 (Above CA Code)	0.38 (CA Code)
0.22 (Above CA Code)	0.38 (CA Code)
0.35 (ID, UT, WY Code)	Existing - Single Pane
0.30 (Above ID, UT, WY Code)	0.35 (ID, UT, WY Code)
0.25 (Above ID, UT, WY Code)	0.35 (ID, UT, WY Code)
0.22 (Above ID, UT, WY Code)	0.35 (ID, UT, WY Code)
0.32 (WA Code)	Existing - Single Pane
0.30 (Above WA Code)	0.32 (WA Code)
0.25 (Above WA Code)	0.32 (WA Code)
0.22 (Above WA Code)	0.32 (WA Code)

Lighting

Photocell Daylighting Control—Interior/Exterior Lighting. Photocells adjust lighting levels according to daylight levels rooms receive. The baseline is no daylighting controls.

Occupancy Sensors. In a space unoccupied for a designated amount of time, occupancy sensors turn off the lights, turning them on again once the sensor detects a person has entered the space.

Time Clocks (Exterior Lighting). Allows the user to program times to automatically turn lights on and off outside the residence. Programmed exterior lighting saves energy by ensuring lights are not accidentally left on during the daytime.

Water Heat

Clothes Washer. ENERGY STAR and CEE-qualified clothes washers use less energy and water than regular washers.[6] Table B-1.6 lists baseline and measure modified energy factor (MEF) and water factor (WF) levels considered. Note: each measure has multiple baselines, which change over time due to changes in the federal standard.

Table B-1.6. Clothes Washer Modified Energy and Water Factor Comparisons

State	Measure Level	Efficiency (MEF & WF)
CA, ID, UT, and WY	Federal Standard 2011 [Baseline]	MEF 1.48 and WF 9.5
CA, ID, UT, and WY	Federal Standard 2016 [Baseline]	MEF 1.72 and WF 8.0
CA, ID, UT, and WY	Federal Standard 2018 [Baseline]	MEF 2.0 and WF 6.0
CA, ID, UT, and WY	ENERGY STAR	MEF 2.0 and WF 6.0
CA, ID, UT, and WY	CEE Tier 2	MEF 2.2 and WF 4.5
CA, ID, UT, and WY	CEE Tier 3	MEF 2.4 and WF 4.0
WA	RTF Market Standard 2011 [Baseline]	MEF 1.94 and WF 7.0
WA	RTF Market Standard 2016 [Baseline]	MEF 2.29 and WF 4.5
WA	RTF Market Standard 2018 [Baseline]	MEF 2.36 and WF 4.1

[6] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CW

State	Measure Level	Efficiency (MEF & WF)
WA	RTF Tier 1	MEF 2.05 and WF 4.97
WA	RTF Tier 2	MEF 2.28 and WF 4.14
WA	RTF Tier 3	MEF 2.66 and WF 3.52

Dishwasher. ENERGY STAR-qualified dishwashers use advanced technology to clean dishes, using less water and energy. As shown in Table B-1.7**Error! Reference source not found.**, two efficiency levels were compared for this measure.

Table B-1.7. Dishwasher Efficiency Levels

State	Measure Level	Measure kWh/yr & Gal/Cycle	Baseline kWh/yr & Gal/Cycle
CA, ID, UT, and WY	ENERGY STAR	295 kWh/yr 4.25 Gal/Cycle	307 kWh/yr 5 Gal/Cycle
CA, ID, UT, and WY	Enhanced Efficiency	250 kWh/yr 4.25 gal/cycle	307 kWh/yr 5 Gal/Cycle
WA	RTF ENERGY STAR	277 kWh/yr 4.25 Gal/Cycle	289 kWh/yr 5 Gal/Cycle
WA	RTF Enhanced Efficiency	250 kWh/yr 4.25 gal/cycle	289 kWh/yr 5 Gal/Cycle

Drain Water Heat Recovery. Also called gravity film heat exchanges, these devices, which recover heat energy from domestic drain water, are used to pre-heat cold water entering hot water tanks. This minimizes temperature differences between heating set points and entering water temperatures.

Faucet Aerators. Faucet aerators, by mixing water and air, reduce amounts of water flowing through faucets. The faucet aerator creates a fine water spray, using a screen inserted in the faucet head. Table B-1.8 presents flow rate requirements for this measure.

Table B-1.8. Faucet Aerator Flow Rates

Measure Flow Rate (GPM*)	Baseline Flow Rate (GPM)
2.2 GPM	3.0 GPM (Existing)
1.5 GPM	2.2 GPM
0.5 GPM	2.2 GPM

* Gallons per minute.

Low-Flow Showerheads. Low-flow showerheads mix water and air to reduce amounts of water flowing through the showerhead, which creates a fine water spray through an inserted screen. This measure represents the various showerhead flow rate reduction levels shown in Table B-1.9**Error! Reference source not found.**.

Table B-1.9. Low-Flow Showerhead Water Flow Levels

Measure Flow Rate (GPM*)	Baseline Flow Rate (GPM)
2.5 GPM	3.0 GPM (Existing)
2.0 GPM	2.5 GPM
1.75 GPM	2.5 GPM
1.5 GPM	2.5 GPM

* Gallons per minute

Water Heater—Pipe Insulation. Insulation around pipes decreases heat loss. The baseline is a hot water pipe without insulation or with code insulation, as seen in Table B-1.10**Error! Reference source not found.**.

Table B-1.10. Pipe Insulation Levels

Measure Insulation	Baseline Insulation
R-3.6 (WA/CA Code)	No Pipe Insulation
R-5.6 (ID/UT/WY Code)	No Pipe Insulation
R-8 (Above WA/CA Code)	R-3.6 (WA/CA Code)
R-8 (Above ID/UT/WY Code)	R-5.6 (ID/UT/WY Code)

Appliances

Freezer—Removal of Standalone . This refers to environmentally friendly disposal of unneeded and/or inefficient standalone freezers. Removal of standalone freezers eliminates the freezer's consumption. Proper disposal is required, as they use hazardous materials such as Freon and CFCs.

Refrigerator—Removal of Secondary. This refers to environmentally friendly disposal of unneeded and/or inefficient secondary refrigerators. The removal eliminates the refrigerator's consumption. Proper disposal is required, as they use hazardous materials such as Freon and CFCs.

Consumer Electronics Battery Chargers—ENERGY STAR. Battery charging systems recharge a wide variety of cordless products, including power tools, small household appliances, and personal care products, such as electric shavers. Conventional battery chargers—even when not actively charging a product—draw as much as five to 20 times more energy than that actually stored in the battery. ENERGY STAR battery chargers, on average, use 35% less energy. The baseline is a standard battery charger.[7]

Smart Strip. Energy-saving products, such as power strips with an occupancy sensor, are found in workstations where power strips are commonly used. Based on occupancy within the work area, the sensor turns on and off power to all devices, such as computers, desk lights, and audio equipment plugged into the power strip.

[7] http://www.energystar.gov/index.cfm?c=battery_chargers.pr_battery_chargers

Residential Equipment Measure Descriptions

Heating and Cooling

Central Air Conditioners. This measure consists of several different air conditioner technology/efficiency levels, as summarized in Table B-1.11**Error! Reference source not found.**. The baseline size is the same as the measure size.

Table B-1.11. Central AC Efficiency Comparison

State	Measure SEER/EER	Baseline SEER/EER
CA	Federal Standard 2015—SEER/EER 14/12.2*	Federal Standard 2006 SEER/EER 13/11
All (except CA)	ENERGY STAR—SEER/EER 14.5/12	
All	CEE Tier 3—SEER/EER 16/13	
All	Enhanced—SEER/EER 18/14	
All	Standard Evaporative Cooler	
All	Premium Evaporative Cooler	

* Becomes baseline after 2015.

Heat Pump—Air or Ground Source (ASHP or GSHP). Electric heat pumps move heat to or from the air or ground to cool and heat homes. Table B-1.12**Error! Reference source not found.** shows different efficiency levels compared in this measure. The baseline size is the same as the measure size.

Table B-1.12. Heat Pump SEER/HSPF Comparisons

State	Measure	Cooling SEER/EER	Heating HSPF	Baseline	Cooling SEER/EER	Heating HSPF
WA	RTF Tier 1	13/11	8.2	Federal Standard 2006	13/11	7.7
WA	RTF Tier 2	14/12	8.5			
CA	Federal Standard 2015*	14/12	8.2			
ALL	ENERGY STAR	14.5/12	8.2			
ALL	CEE Tier 2	15/12.5	8.5			
ALL	Enhanced	16/13	9.0			
ALL	ENERGY STAR Ground Source Heat Pump	NA/17.1	3.6 COP			
ALL	CEE Tier 2	15/12.5	8.5	Standard Electric Furnace	NA	1.0

* Becomes the baseline after 2015.

Heat Pump—Ductless Mini-Split. Ductless heat pumps move heat to or from the air, cooling and heating homes without the need for costly ductwork. This measure provides savings when compared to baseboard heating or room air conditioners. Baseline and measure efficiencies are listed in Table B-1.13.

Table B-1.13. Ductless Mini-Split Comparisons

Measure SEER/EER & HSPF	Baseline CEER/EER & HSPF
Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Baseboard Heating HSPF 1
	Federal Standard 2001 Room AC CEER/EER 9.7/9.8

Room Air Conditioner (Room AC)—(8,000-13,999 BTU/HR). ENERGY STAR-qualified room air conditioners use less energy than conventional models, through improved energy performance as well as timers for better temperature control. Table B- 1.14 shows different efficiency tiers considered in this measure.

Table B- 1.14. Room AC CEER/EER Comparisons

Measure CEER/EER	Baseline CEER/EER
Federal Standard 2015 - CEER/EER 10.9/11*	Federal Standard 2001 CEER/EER 9.7/9.8
ENERGY STAR - CEER/EER 10.7/10.8	Federal Standard 2001 CEER/EER 9.7/9.8

* Becomes the baseline after 2015.

Lighting

GENERAL SERVICE LAMP

Compact Fluorescent Light Bulbs (CFLs). Standard CFLs use less energy than the maximum mandated by the Energy Independence and Security Act of 2007 (EISA). This measure considers exterior and interior standard screw base lighting, and measure and baseline consumption is a weighted average of bulb wattages used in each condition. The baseline for this measure reflects changes over 2012–2014 to accommodate EISA.

Light Emitting Diodes (LEDs). LEDs are solid-state devices, converting electricity to light using very high efficiency, requiring significantly less energy, and providing long life. This measure considers exterior and interior standard screw base lighting, and measure and baseline consumption is a weighted average of bulb wattages used in each condition. The baseline for this measure reflects changes over 2012–2014 to accommodate EISA.

SPECIALTY LAMP

Compact Fluorescent Light Bulbs. Specialty CFLs use less energy than an incandescent light bulb. This measure considers interior specialty lighting, including the bulb types listed below, and measure and baseline consumption is a weighted average of bulbs used in each condition. The baseline for this measure is an incandescent light bulb.

Light Emitting Diodes. LEDs are solid-state devices, converting electricity to light using very high efficiency, requiring significantly less energy, and providing long life. This measure considers interior specialty lighting including the bulb types listed below, and measure and baseline consumption is a weighted average of bulbs used in each condition. The baseline for this measure is an incandescent light bulb.

Specialty lamps include:

- 3-Way
- Dimmable
- CC Candelabra—decorative
- CC Candelabra—primary
- Torpedo
- Reflector
- Globe
- A-Lamp
- Daylight
- High Wattage
- T2 Twist

Water Heat

Water Heater—Heat Pump. The heat pump moves heat from a warm reservoir (such as air), transferring this heat into hot water systems.[8] Baseline and measure efficiencies are listed in Table B-1.15.

Table B-1.15. Heat Pump Water Heater Comparisons

State	Measure Efficiency	Baseline Efficiency
ALL	Federal Standard 2015 > 55 GAL - EF 1.97*	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87
CA, ID, UT, and WY	ENERGY STAR > 55 GAL - EF 2.0	
WA	RTF Market Standard > 55 GAL - EF 1.99	
WA	RTF Tier 1 > 55 GAL - EF 2.05	
WA	RTF Tier 2 > 55 GAL - EF 2.08	
WA	RTF Tier 1 ≤ 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater ≤ 55 GAL - EF 0.92
CA, ID, UT, and WY	ENERGY STAR ≤ 55 GAL - EF 2.0	
WA	RTF Tier 2 ≤ 55 GAL - EF 2.08	

* Becomes baseline after 2015.

Water Heater—Storage. High-efficiency water heaters operate more efficiently than standard electric water heaters due to reduced standby losses. This measure assumes an energy factor (EF) for high-efficiency water heaters less than or equal to 55 gallons of 0.93 and 0.95 (Federal Standard, April 2015), an increase from a standard EF of 0.92 (Federal Standard, 2004).

Appliances

Cooking Oven. High-efficiency convection ovens operate at lower temperatures and achieve quicker cook times than standard ovens, due to fans circulating heat evenly throughout the oven. The baseline is a 2012 federal standard oven.

Clothes Dryer. High-efficiency dryer features, such as moisture sensors, minimize energy usage while retaining performance. Steam clothes dryers can also save additional energy by efficiently eliminating wrinkles, requiring less dryer reruns to refresh wrinkled clothing.

Dehumidifier—ENERGY STAR. ENERGY STAR-qualified models have more efficient refrigeration coils, compressors, and fans than conventional models, meaning they use less energy to remove moisture. These qualified models remove the same amount of moisture as a similarly-sized standard unit, but use 10% to 20% less energy. The baseline for this measure is a 2013 federal standard dehumidifier.[9]

Freezer. ENERGY STAR-qualified freezers use at least 10% less energy than standard models due to improvements in insulation and compressors. This measure considers the change in 2015 federal standard efficiency and three RTF tiers, ranging from 10% to 35% more efficient than the 2001 federal standard shown in Table B-1.16.

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[8] Description source: U.S. Department of Energy; http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12840

[9] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=DE

Table B-1.16. Freezer Measure Levels

State	Measure Level	Baseline Level
CA, ID, UT, and WY	Federal Standard 2015*	Federal Standard 2001
CA, ID, UT, and WY	ENERGY STAR	
WA	RTF Tier 1 (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard
WA	RTF Tier 2 (ENERGY STAR 20% to 30% More Efficient)	
WA	RTF Tier 3 (ENERGY STAR 30% to 35% More Efficient)	

* Becomes baseline after 2015.

Microwave—High-Efficiency. High-efficiency microwaves, with more efficient power supplies, fans, magnetron, and reflective surfaces, provide energy savings in comparison with conventional microwaves.

Refrigerator. ENERGY STAR and CEE-qualified refrigerators use at least 20% less energy than standard models due to improvements in insulation and compressors. This measure considers the change in 2015 federal standard efficiency and two RTF and two CEE tiers above ENERGY STAR, shown in Table B-1.17.

Table B-1.17. Refrigerator Measure Levels

State	Measure Level	Baseline Level
CA, ID, UT, and WY	Federal Standard 2015*	Federal Standard 2001
CA, ID, UT, and WY	ENERGY STAR	
CA, ID, UT, and WY	CEE Tier 2	
CA, ID, UT, and WY	CEE Tier 3	
WA	RTF Tier 1 (ENERGY STAR)	RTF Market Standard
WA	RTF Tier 2	
WA	RTF Tier 3	

* Becomes baseline after 2015.

Consumer Electronics

Computer—ENERGY STAR. ENERGY STAR computers consume less than 2 watts in "sleep" and "off" modes, and are more efficient than conventional units in "idle" modes, resulting in 30% to 65% energy savings.

DVD Player—ENERGY STAR. ENERGY STAR-qualified DVD products meeting the new requirements use up to 60% less energy than standard models.[10] ENERGY STAR DVD players use only 1 watt, as little as one-fourth the energy used by standard models, in "off" or "sleep" modes. The baseline for this measure is a standard DVD player.

Home Audio System—ENERGY STAR. According to ENERGY STAR specifications, qualified audio systems must have: default power down timing; 1 watt sleep/off mode consumption; and 55% efficiency for amplifiers greater than 20 watts input power.[11]

[10] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=DP

[11] http://www.energystar.gov/index.cfm?c=audio_dvd.pr_crit_audio_dvd

Monitors—ENERGY STAR. ENERGY STAR monitors feature: (1) an "on" mode, where the maximum allowed power varies, based on the computer monitor's resolution; (2) a "sleep" mode, where computer monitor models must consume 2 watts or less; and (3) an "off" mode, where computer monitor models must consume 1 watt or less. The baseline equipment does not include these features.[12]

Office Multifunction Device—ENERGY STAR. ENERGY STAR Models meeting the most recent ENERGY STAR requirements are 40% more energy efficient, and feature efficient designs helping the equipment run cooler and last longer.

Office Copier—ENERGY STAR. ENERGY STAR copiers deliver the same performance as conventional equipment and are, on average, 27% more efficient, and power down when not in use. The baseline measure is a non-ENERGY STAR copier.[13]

Office Printers—ENERGY STAR fax machines enter sleep mode after inactivity. This reduces their total power consumption by 50%.[14]

Set Top Box—ENERGY STAR. Set-top boxes earning ENERGY STAR prove at least 40% more efficient than conventional models.[15] The baseline measure is a standard receiver.

TV—ENERGY STAR. ENERGY STAR-qualified TVs use about 40% less energy than standard units.[16] ENERGY STAR models must consume no more than 1 watt while in Sleep Mode. The baseline is a standard television, generally consuming more than 3 watts when off.

Other

Pool Pumps—Two-Speed Motor. This enables pool pump motors to run at high and low speeds, rather than constantly running at full power. The baseline for this measure is a standard, one-speed motor.

Pool Pumps—VSD. The enables pool pump motors to run at variable speeds, as opposed to constantly running at full power. The baseline for this measure is a standard, one-speed motor.

[12] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.ShowProductGroup&pgw_code=MO

[13] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CP

[14] http://www.energystar.gov/ia/products/fap/IE_Prog_Req.pdf

[15] http://www.energystar.gov/index.cfm?c=settop_boxes.settop_boxes

[16] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=TV

APPENDIX B-2. COMMERCIAL MEASURE DESCRIPTIONS

Commercial Retrofit Measure Descriptions

Heating and Cooling

Automated Exhaust VFD Control—Parking Garage CO sensor. This measure allows the ventilation system to run only when CO levels rise above a specified level. The ventilation system would run constantly without this measure.

Automated Ventilation VFD Control (Occupancy/CO2 sensors). This measure is also known as Demand Control Ventilation (DCV), where the ventilation system automatically adjusts air flow when CO2 levels rise above a specified level. When using CO2 control, a minimum ventilation rate is maintained at all times to control non-occupant contaminants, such as off-gassing from furniture, equipment, and building components. Without this, as a baseline, the ventilation system would run constantly.

Chilled Water/Condenser Water Settings-Optimization. Adjustments made to chilled and condenser water system settings better match building loads and reduce unnecessary use of compressor and pumps.

Chilled Water Piping Loop with Variable Speed Drive (VSD) Control. A VSD controller, with two-way valves at the cooling coils, controls the chilled water pump, varying pump speeds and chilled water flows to match varying cooling loads, thus reducing pumping energy requirements. The baseline is a constant speed pump with three-way valves.

Chiller Water-Side Economizer. A heat exchanger attached to a condenser water piping loop, operating when outdoor conditions can produce condenser water colder than the mixed air temperature. A water side economizer is used if an outdoor-air economizer is not practical. The baseline measure is no economizer.

Convert Constant Volume Air System to Variable Air Volume (VAV). The VAV allows the airflow volume of a HVAC system to vary heating or cooling loads rather than over-conditioning and short-cycling. The baseline in this case is a constant volume system.

Cool Roof. ENERGY STAR®-qualified cool roofs can lower roof surface temperatures up to 100ºF, thereby decreasing amounts of heat transferred into a building. Cool roofs can help reduce amounts of air conditioning needed in buildings, and can reduce peak cooling demand by 10%–15%. This measure could be considered a passive measure.

Cooling Tower—Decrease Approach Temperature. An oversized cooling tower allows a reduced approach temperature, which saves energy. The approach temperature is the difference between the tower water leaving and the wet-bulb temperature. This measure assumes a 6-degree delta, compared to the baseline of a 10-degree temperature delta.

Cooling Tower—Two-Speed Fan Motor. A two-speed fan cycles between off, low, and high speeds to maintain the tower set point. The low-speed setting option uses less energy than a single, high-speed fan. The baseline measure is a single-speed fan motor.

Cooling Tower—VSD Fan Control. One step more sophisticated than a two-speed fan motor is the variable speed drive (VSD). A VSD drive modulates the air flow, so heat rejection exactly matches the load at the desired set point. The baseline measure is a two-speed fan motor.

Direct/Indirect Evaporative Cooling, Pre-Cooling. A direct evaporative cooler is a low-energy system that evaporates water into the air stream, thus reducing the air temperature, but increases the humidity. An indirect evaporative cooler uses a secondary air stream, cooled by water, and going through a heat exchanger with the primary air stream, cooling the air but not affecting the humidity. A direct/indirect system cools the air stream, first through an indirect cooler, and then cools it further through a direct cooler. Including an evaporative cooler before the Direct Expansion (DX) system will reduce the overall cooling load.

Direct Digital Control System—Optimization. Direct digital control (DDC), also known as an energy management system (EMS), allows digital monitoring and control of HVAC and lighting systems. Optimization of the control system upgrades a high-efficiency EMS to a premium efficiency system.

Duct Repair and Sealing. The repair and sealing of leaky ducts creates significant energy savings by ensuring conditioned air goes only to occupied spaces, thereby reducing excessive runtimes/loads on HVAC systems.

DX Package Air-Side Economizer. An air-side economizer uses already cooled air (return air), mixed with a proportion of outside air to cool indoor spaces. Using the return air results in energy savings, as less air must be cooled.

DX Tune-Up/Diagnostics. Regular maintenance of DX air-conditioning systems includes activities such as: checking controls, replacing filters, cleaning coils and blowers, and checking refrigerant levels.

Exhaust Air to Ventilation Air Heat Recovery. Captures air exhausted out of a building during the heating season, which would be warmer than the air outside. Transferring this heat to incoming air lowers overall heating loads.

Exhaust Hood Makeup Air. Provides exhaust air at the hood instead of allowing the hood to exhaust conditioned air in the room. The baseline measure is conditioned air expelled through exhaust hoods.

Green Roof. A green roof is a living roof, supporting soil and plant growth. A series of carefully engineered layers, applied to the roof deck, are watertight, lightweight, and long lasting. Green roofs can be incorporated into new buildings as long as load requirements can be met. They are suited for roofs with slopes ranging up to 20°, and are most successful when sufficient attention has been paid to selecting plants that thrive in the local climate and conditions. One of the most significant advantages green roofs offer is they can last up to three times longer than a standard

roof. A green roof can also buffer temperature extremes, improving a building's energy performance by dropping the temperatures on the roof.

Hotel Key Card Energy Control System. This a key card system controls room HVAC and lighting during non-occupied periods. Occupancy is determined by presence of a key card and/or additional sensors. The central system sets heating and cooling to a minimum, and turns off lighting when the key card is removed. Once a guest returns and inserts the key card, they can fully control of the room systems.

Infiltration Reduction (Caulking, Weather Stripping, etc.). Sealing air leaks in windows, doors, roof, crawlspaces, and outside walls decreases overall heating and cooling losses. The baseline measure is 1.00 Air Changes per Hour (ACH), while the measure value is 0.65 ACH.

Insulation—Ceiling. These measures represent an increase in R-value from existing building conditions to current state code, and current state code to better than code R-value improvements. Table B-2.1 presents baseline and measure values.

Table B-2.1. Ceiling Insulation Measures

Measure	Baseline
R-20ci (ID, UT, & WY State Code)	Average Existing Conditions
R-25ci (CA State Code)	Average Existing Conditions
R-30	R-20ci (ID, UT, & WY State Code)
R-30	R-25ci (CA State Code)
R-30ci (WA State Code)	Average Existing Conditions
R-38	R-30ci (WA State Code)

Insulation—Duct. Packaged DX and heat-pump equipment generally are coupled with a ducting system inside a building. Insulating ducts reduces energy loss in unoccupied plenum space. Table B-2.2**Error! Reference source not found.** presents baseline and measure values.

Table B-2.2. Duct Insulation Measures

Measure	Baseline
R-5 (ID, UT, & WY State Code)	No Insulation
R-7 (WA State Code)	No Insulation
R-8 (CA State Code)	No Insulation
R-8	R-5 (ID, UT, & WY State Code)

Insulation—Floor (Non-Slab). These measures represent an R-value increase from existing building conditions to current state code, and from current state code to better than code R-value improvements for the floor space (non-slab). Table B-2.3 presents baseline and measure values.

Table B-2.3. Floor Insulation Measures

Measure	Baseline
R-25 (CA State Code)	Average Existing Conditions
R-30 (ID, UT, WA & WY State Code)	Average Existing Conditions
R-30	R-25 (CA State Code)
R-38	R-30 (ID, UT, WA & WY State Code)

Insulation—Wall. These measures represent an increase in the R-value to current state code values or better. Table B-2.4 presents baseline and measure values.

Table B-2.4. Wall Insulation Measures

Measure	Baseline
R-13 + 3ci (WY State Code)	Average Existing Conditions
R-13 + 7.5ci (ID, UT, & WA State Code)	Average Existing Conditions
R-16 (CA State Code)	Average Existing Conditions
R-13 + 10ci	R-13 + 3ci (WY State Code)
R-13 + 10ci	R-13 + 7.5ci (ID, UT, & WA State Code)
R-21	R-16 (CA State Code)

Natural Ventilation. Natural ventilation systems rely on pressure differences to move fresh air through buildings. Unlike fan-forced ventilation, natural ventilation uses the natural forces of wind and buoyancy to deliver fresh air into buildings. The specific approach and design of natural ventilation systems varies, based on building types and local climates. However, the amount of ventilation depends on careful design of internal spaces, and the size and placement of openings in the building. Natural ventilation offsets energy required to run forced air ventilation systems.[17]

New Construction Integrated Building Design. Leadership in Energy and Environmental Design (LEED) has developed guidelines to build energy-efficient buildings, using high-performance integrated building design. Tier I integrated buildings are up to 30% more energy efficient than standard code, according to ASHRAE/IESNA Standard 90.1-1999. Tier II buildings are up to 50% more efficient than standard building codes. The baseline measure is built to ASHRAE/IESNA Standard 90.1-1999.

Pipe Insulation. Adding 1.5 inches of R-6 insulation around chilled water pipes minimizes increases in temperature, thereby reducing demand on chiller systems.

Re-Commissioning. Commissioning ensures installed energy-using systems operate in an optimal fashion to maximize energy efficiency. The commissioning process can be applied to existing buildings to restore them to optimal performance. Retrocommissioning is a systematic, documented process, identifying low-cost operational and maintenance improvements in existing

[17] Description source: National Renewable Energy Laboratory

buildings, bringing the buildings up to the design intentions of its current operation.[18,19] The baseline measure is no commissioning.

Window Film. Solar control window films, applied to existing windows, reduce peak demand during hot months, and conserve energy when air conditioning might be required. In addition to energy management benefits, use of these films reduces exposure to ultraviolet radiation and glare.[20]

Windows—High-Efficiency. This measure represents an increase in building performance by reducing the U-value in existing construction and new construction windows, as shown in Table B-2.5**Error! Reference source not found.**.

Table B-2.5. High-Efficiency Window Measures

Measure U-Value	Baseline U-Value
0.50 (WY State Code)	Average Existing Condition
0.47 (CA State Code)	Average Existing Condition
0.40 (WA State Code)	Average Existing Condition
0.35 (ID & UT State Code)	Average Existing Condition
0.32	0.35 (ID & UT State Code)
0.32	0.40 (WA State Code)
0.32	0.47 (CA State Code)
0.32	0.50 (WY State Code)

Lighting

Bi-level Control, Stairwell Lighting. An occupancy sensor reduces light loads by 50% when stairwells are unoccupied for a set amount of time. The baseline is continuous operation at full power.

Controlled Atmosphere—Fruit Storage—High Bay Lighting Upgrade Package. Lighting reduction high bay packages include upgrading to high efficiency fixtures, such as T5 high output, to reduce the overall lighting load.

Controlled Atmosphere—Fruit Storage—Lighting Controls. Lighting reduction control packages include lighting controls, such as time clocks and occupancy sensors, to reduce overall lighting loads.

Covered Parking Lighting. Replacing inefficient metal halide lamps with LEDs and high-pressure sodium lamps with LED Low Bay lighting, reduces energy use of covered parking garages.

[18] http://www.green.ca.gov/CommissioningGuidelines/default.htm

[19] http://cbs.lbl.gov/BPA/cct.html

[20] http://www.iwfa.com/iwfa/Consumer_Info/windowfilmbenefits.html

Daylighting Controls, Outdoors (Photocell). Exterior lighting controls via photocell turn on and off exterior light fixtures when sunlight levels reach desired set points. The measure achieves savings over time-clock or manual controls through changes in seasonal and site conditions by improving nighttime durations.

Dimming-Continuous, Fluorescent Fixtures. A dimming switch allows light levels to vary from 0%–100% brightness. A continuously dimming switch permits variations throughout the range, increasing electricity savings. The baseline measure is operating fluorescent fixtures at full power.

Dimming-Stepped, Fluorescent Fixtures. The fixtures allows the user to vary light levels by a number of specified tiers to adjust for amounts of outside daylight. The baseline measure is operating fluorescent fixtures at full power.

Exit Sign—LED. LED exit signs use only 6 watts of power, and last over 50,000 hours, while CFL exit signs use 26 watts of power and have a shorter life.

Exit Sign—Photoluminescent or Tritium. Photoluminescent or tritium signs use little to no energy (a maximum of 2 watts), while providing bright lighting suitable for exit signage. This measure's low-energy consumption can provide savings, compared to the 6 watts consumed by LED signs.

Exterior Building Lighting—Package. Exterior lighting package results in a 30% decrease in lighting power density. The baseline lighting technology is representative of all available technologies making up total watts per square foot.

Display Case LEDs. LEDs are highly efficient bulbs that can be used for refrigeration case lights, resulting in energy savings over a standard fluorescent case light. This measure applies specifically to closed cases.

Display Case LEDs (Open Cases). LEDs can be used for refrigeration case lights, resulting in energy savings over a standard fluorescent case light. This measure applies specifically to open cases.

Occupancy Sensor Control. These units turns off lighting in areas where activity is not detected. Occupancy measures can control single or multiple lighting zones. Controlled lighting wattage varies, depending on applications. The baseline assumes no lighting controls.

Solid State LED White Lighting. LEDs are solid-state devices that convert electricity to light, with very high efficiency and long life. Recently, lighting manufacturers have been able to produce "cool" white LED lighting indirectly, using ultraviolet LEDs to excite phosphors emitting a white-appearing light. This measure applies to exterior lighting, and includes landscape, merchandise, signage, and structure lighting.

Surface Parking Lighting. By replacing inefficient metal halide lamps with LED lighting, the energy use of surface parking lots can be reduced.

Time Clock. The units include an integrated time-clock, which automatically switches lighting and other loads on and off on a time schedule, or in response to an occupancy sensor or building automation system.

Refrigeration

Anti-Sweat (Humidistat) Controls. Enables the user to turn refrigeration display case anti-sweat heaters off when ambient relative humidity reaches levels low enough to prevent sweating. Without the control, the heaters generally run continuously.

Controlled Atmosphere—Fruit Storage—Controlled Atmosphere Retrofit—CO2 Scrub. A carbon dioxide scrubber absorbs CO2, and are used in controlled atmosphere (CA) storage to maintain a specified CO2 level.

Controlled Atmosphere—Fruit Storage—Controlled Atmosphere Retrofit—Membrane. Membrane technology units feature a quality-air, pre-treatment filtration system. Fruit storage depends on a very controlled environment, which slows the ripening process until a product is ready to be removed from the controlled atmosphere storage room. This makes the membrane generator an extremely low-cost and reliable source for infusing nitrogen into the rooms.

Controlled Atmosphere—Fruit Storage—Fruit Storage Refrigeration Retrofit. This measure for CA storage is designed as a combined package of other refrigeration measures. The system upgrade includes: a premium-efficiency EMS system; a VSD compressor; a VSD condenser; a VSD evaporator fan; and floating condenser head pressure controls.

Controlled Atmosphere—Fruit Storage—Fruit Storage Refrigeration Tune-up. Refrigeration tune-ups include procedures such as: checking set points; keeping supply and return air grilles clean; checking and adjusting settings of thermostatic expansion valves (TXV); adjusting head pressure controls; and reviewing suction pressure set points. Tune-ups of refrigeration systems in controlled atmosphere storages extends their lifetimes, and increases the system's overall energy efficiency.

Case Electronically Commutated Motor (ECM). The case fan is a refrigeration system component. ECMs are smaller, variable-speed motors operating from a single-phase power source, with an electronic controller mounted in or on the motor. The baseline measure is a standard efficiency motor.

Case Replacement Low and Med Temp. Refrigerated display cases achieve higher performance efficiency and reduce overall energy consumption by incorporating high-performance evaporative fans, such as: ECMs; energy-efficient, double-pane glass doors; anti-sweat controls; high-efficiency lighting and ballasts such as T8 or LED lamps; and improved insulation. Replacing inefficient display cases with more efficient display cases reduces energy consumption.

Commercial Refrigerator—Semi-Vertical and Vertical—No Doors—Med Temp. This measure represents an efficient open (no doors), refrigerated, medium temperature case, including a high-efficiency cooling unit and an optimum design to minimize energy consumption. The baseline assumes a standard efficiency unit.

Compressor VSD Retrofit. Modulates motor speeds in response to changes in load. When low-load conditions exist, the current to the compressor motor decreases, slowing the compressor motor. The baseline is a constant-speed compressor.

Demand Control Defrost—Hot Gas. When frost collects on the evaporator, it reduces coil capacity by acting as a layer of insulation, reducing airflow between the fins. In hot gas defrost, refrigerant vapor from the compressor discharge or the high-pressure receiver warms the evaporator coil, melting frost collected there.[21]

Display Case Motion Sensors. Savings result from a direct reduction in lighting runtimes, and a reduced cooling load from addition of display case motion sensors.[22]

Floating Condenser Head Pressure Controls. This measure adds controls to float head pressures down to lower temperatures during periods of low load. The base case is a standard multiplex system, with a fixed condensing set point.

Glass Door ENERGY STAR Refrigerators/Freezers. "Low-E," double-pane thermal glass doors reduce cooling loses in refrigerated, reach-in cases.

Night Covers for Display Cases. Night covers help eliminate wasted refrigeration cooling by insulating display cases. In addition, they reduce heating loads of buildings through less escaped refrigerated air needing to be reheated.

Refrigeration Commissioning or Recommissioning. Commissioning ensures refrigeration systems installed operate in an optimal fashion to maximize energy efficiency. Retrocommissioning checks previously commissioned equipment to ensure it continues to run efficiently. The baseline measure is no commissioning.[23]

Solid Door ENERGY STAR Refrigerators/Freezers. ENERGY STAR-labeled, commercial, solid-door refrigerators and freezers are designed with high-efficiency components, such as: ECM evaporators and condenser fan motors; hot gas, anti-sweat heaters; or high-efficiency compressors. Compared to standard models, ENERGY STAR-labeled, commercial, solid-door refrigerators and freezers save energy.[24]

Standalone to Multiplex Compressors. A multiplex-compressor system consists of multiple compressors, drawing from a common suction header, serving any number of refrigerated display fixtures. The suction group is controlled to satisfy lowest temperatures required by any of the attached display fixtures; consequently, the fixtures served by a given suction group usually have similar temperature requirements (low- versus medium-temperature groups). The baseline is a single, dedicated compressor system for each refrigeration load.

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[21] Parker Refrigeration Specialists.

[22] http://www.nwcouncil.org/energy/rtf/measures/com/ComGroceryDisplayCaseLEDs_v2_1.xlsm

[23] http://cbs.lbl.gov/BPA/cct.html

[24] ENERGY STAR; http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CRF

Strip Curtains for Walk-Ins. Strip curtains on walk-in refrigerators reduce infiltration of warm air into refrigerated spaces by improving barriers between cold spaces and ambient air.

Walk-In ECM. The walk-in fan is a refrigeration system components. ECMs are smaller, variable-speed motors operating from a single-phase power source, with an electronic controller mounted in or on the motor. The baseline measure is a standard efficiency motor.

Walk-in Evaporator Fan ECM Controllers. This measure represents adding a controller to walk-in cooler and freezer evaporator fan motors. The evaporator fan motor type is an ECM. The controller cycles motors between high and low speeds (2-speed) or on/off, when there is no call for cooling.[25]

Visi Cooler. A Visi Cooler is a self-contained vertical storage cooler, with a glass door to visibly display retail products. Such coolers typically are found in grocery and restaurant businesses. Energy-efficient Visi Coolers include: high-efficiency cooling units; self-closing doors; and energy-efficient lighting.

VFD Rooftop Unit Supply Fan (Grocery Only). This measure is installed on rooftop unit supply fans, serving grocery store sales floors. Units must have fixed ventilation damper and shut-off damper controls allowed, and must have continuous fan operation during occupied periods. Units with fans in "auto" mode do not qualify. A CO2 control is required to provide increased ventilation during times of high occupancy (maintain 1,150 ppm CO2 concentration).[26]

Water Heating

Clothes Washer Commercial. ENERGY STAR qualified commercial washers have a greater capacity than conventional top-load models with an agitator. Some front-loaders can wash over 20 pounds of laundry at once, compared to 10–15 pounds for a standard top-loader. This means residents can do fewer loads. and avoid having to bring big, bulky items to the Laundromat.[27] This measure replaces a clothes washer, having a Modified Energy Factor (MEF) of 1.60, with an ENERGY STAR model assigned a MEF value of 2.43.

Clothes Washer Residential. ENERGY STAR-qualified clothes washers use less energy and water than regular washers.[28] Measure iterations are shown below in Table B-2.6.

Table B-2.6. Residential Clothes Washer MEFs

State	Measure MEF	Baseline MEF
CA, ID, UT, and WY	ENERGY STAR - MEF 2.0	Standard Clothes Washer - MEF 1.48
CA, ID, UT, and WY	CEE Tier 2 - MEF 2.2	Standard Clothes Washer - MEF 1.48
CA, ID, UT, and WY	CEE Tier 3 - MEF 2.4	Standard Clothes Washer - MEF 1.48
CA, ID, UT, and WY	ENERGY STAR - MEF 2.0	Federal Standard 2016 - MEF 1.72
CA, ID, UT, and WY	CEE Tier 2 - MEF 2.2	Federal Standard 2016 - MEF 1.72

[25] http://www.nwcouncil.org/energy/rtf/measures/com/GroceryEvapFanControllerECMWalkIn_v1.xls

[26] http://www.nwcouncil.org/energy/rtf/measures/Com/GroceryHVACvfd_v1_1.xlsm

[27] http://www.energystar.gov/index.cfm?c=clotheswash.pr_clothes_washers_comm

[28] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CW

State	Measure MEF	Baseline MEF
CA, ID, UT, and WY	CEE Tier 3 - MEF 2.4	Federal Standard 2016 - MEF 1.72
CA, ID, UT, and WY	CEE Tier 2 - MEF 2.2	Federal Standard 2018 - MEF 2.0
CA, ID, UT, and WY	CEE Tier 3 - MEF 2.4	Federal Standard 2018 - MEF 2.0
WA	RTF Tier 1 - MEF 2.05	RTF Market Standard 2011 - MEF 1.94
WA	RTF Tier 2 - MEF 2.28	RTF Market Standard 2011 - MEF 1.94
WA	RTF Tier 3 - MEF 2.66	RTF Market Standard 2011 - MEF 1.94
WA	RTF Tier 3 - MEF 2.66	RTF Market Standard 2016 - MEF 2.29
WA	RTF Tier 3 - MEF 2.66	RTF Market Standard 2018 - MEF 2.36

Demand-Controlled Circulating Systems. A demand-controlled circulating system only circulates hot water when required. The baseline measure is a continuously circulating hot water system, resulting in energy loss through pipes.

Dishwasher Residential. Residential-sized ENERGY STAR dishwashing systems often are more appropriate for smaller commercial buildings. Measure iterations are shown in Table B-2.7.

Table B-2.7. Residential Dishwasher Maximum Consumptions (kWh/yr)

State	Measure	Baseline
CA, ID, UT, and WY	ENERGY STAR - 295 kWh/yr	Federal Standard 2010 - 355 kWh/yr
CA, ID, UT, and WY	Enhanced Efficiency - 250 kWh/yr	Federal Standard 2010 - 355 kWh/yr
CA, ID, UT, and WY	ENERGY STAR - 295 kWh/yr	Federal Standard 2014 - 307 kWh/yr
CA, ID, UT, and WY	Enhanced Efficiency - 250 kWh/yr	Federal Standard 2014 - 307 kWh/yr
WA	RTF ENERGY STAR - 277 kWh/yr	RTF Market Standard 2010 - 313 kWh/yr
WA	RTF Enhanced Efficiency - 250 kWh/yr	RTF Market Standard 2010 - 313 kWh/yr
WA	RTF ENERGY STAR - 277 kWh/yr	RTF Market Standard 2014 - 289 kWh/yr
WA	RTF Enhanced Efficiency - 250 kWh/yr	RTF Market Standard 2014 - 289 kWh/yr

Dishwashing—Commercial—High Temp. ENERGY STAR high-temperature commercial dishwashers have a minimal idle rate as well as a minimal amount of water consumption per rack of loaded dishes, depending on size, and are more efficient than standard high-temperature commercial dishwashers.[29]

Dishwashing—Commercial—Low Temp. ENERGY STAR low-temperature commercial dishwashers use chemicals, combined with low temperatures, to save energy when compared to standard, high-temperature commercial dishwashers.

Drainwater Heat Recovery Water Heater. Drain water heat recovery devices recover heat energy from drain water, and use that heat to preheat cold water entering the hot water tank, minimizing the temperature rise required to achieve the set point on the water heater.[30]

[29] ENERGY STAR; http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COH

[30] www.toolbase.org/Techinventory/TechDetails.aspx?ContentDetailID=858&BucketID=6&CategoryID=9

Hot Water Storage Hot Water (SHW) Pipe Insulation. One inch of R-4 insulation, added around hot water pipes, decreases heat loss. This measure only applies for existing construction and SWH. The baseline measure is no insulation.

Low-Flow Faucet Aerators. Faucet aerators, mixing water and air, reduce amounts of water flowing through the faucet, creating a fine water spray through an inserted screen in the faucet head. This measure has flow-rate requirements of 1.5 GPM, compared to a baseline of 2.2 GPM.

Low-Flow Pre-Rinse Spray Valves. Low-flow spray valves mix water and air to reduce amounts of water flowing through the spray head, which creates a fine water spray through an inserted screen in the spray head. This achieves a flow reduction of over 50%, from a flow rate of 1.6 GPM (code) to 0.6 GPM.

Low-Flow Showerheads. Low-flow showerheads mix water and air to reduce amounts of water flowing through the showerhead. The showerhead creates a fine water spray using an inserted screen in the showerhead. Table B-2.8 shows flow-rate requirements for this measure.

Table B-2.8. Low-Flow Showerhead Flow Rates

Measure Flow Rate (GPM)	Baseline Flow Rate (GPM)
2.5	3.0
1.75 (WA State Code)	3.0
1.5	2.5
1.5	1.75 (WA State Code)

Ultrasonic Faucet Control. Ultrasonic sensors automatically turn faucet water on and off when motion is detected at the sink, eliminating water running continuously while washing hands.

Water-Cooled Refrigeration with Heat Recovery. Heat recovery gathers and uses thermal energy that normally would be rejected from the system to the ambient environment; in this case, rejected heat is utilized by the water heater.

Other

Combination Oven. Commercial combination ovens use dry heat and steam, injected into the oven when the food being cooked needs it. High-efficiency combination ovens with 60% efficiency use about one-half as much energy as standard combination ovens.[31]

Convection Oven—High Efficiency. Commercial ENERGY STAR electric convection ovens must meet specification requirements of 74% cooking energy-efficiency, and an idle energy rate of 1.3 kW, whereas standard electric convection ovens have a 67% cooking energy efficiency, and an idle energy rate of 1.5 kW.

Cooking Hood Controls. Utilizing sensors and two-speed or variable speed fans, hood controls reduce exhaust (and makeup) airflow when appliances do not operate at capacity (or have been turned off). The baseline for this measure would be no hood controls.

[31] http://www.energystar.gov/ia/partners/publications/pubdocs/restaurant%20guide%20508%20-%20Dec%202009.pdf

ENERGY STAR—Battery Charging System. Battery charging systems recharge a wide variety of cordless products, including power tools and small appliances. An ENERGY STAR charging system uses 35% less energy than a baseline, non-ENERGY STAR battery charger.[32]

ENERGY STAR—Scanners. ENERGY STAR-enabled scanners enter a low power "sleep" mode after inactivity.[33]

ENERGY STAR—Water Cooler. ENERGY STAR coolers, providing only cold water, consume less than 0.16 kWh per day; a unit providing hot and cold water consumes less than 1.20 kWh per day. ENERGY STAR-qualified water coolers consume 45% less energy than standard models.[34]

Fryers—New CEE Efficient Electric Deep Fat Fryers. Commercial, 15-inch wide, CEE-rated electric fryers have a heavy-load cooking efficiency of 80% or better, and, when idle, use less than 1,000 watts.[35] The baseline is a standard, electric deep fat fryer.

Griddle. Electric ENERGY STAR griddles operate at least 70% more efficiently. The baseline measure is a standard grill at 32% efficiency.[36]

Hot Food Holding Cabinet. ENERGY STAR hot food-holding cabinets use a maximum of 40 watts/cubic foot, less than the baseline measure, a conventional holding cabinet.[37]

Ice Maker. High-efficiency commercial ice makers use high -efficiency compressors and fan motors, thicker insulation, and other measures to achieve 10% more efficiency than the baseline measure—a conventional automatic commercial ice maker.

Low Pressure Distribution Complex HVAC. Low-pressure, under-floor air distribution systems introduce air into occupancy zones at relatively low velocities. The decrease in pressure differentials and, therefore, air velocity results in lower energy consumption by air handlers. The baseline for this measure is a variable air volume or constant volume HVAC system.

Motor—CEE Premium-Efficiency Plus. CEE premium-efficiency motors are more efficient than standard NEMA efficiency motors.[38] This measure specifically relates to HVAC motors, ranging from 1 HP to 200 HP, depending on the building size.

Motor Rewind. When a motor fails, the user or owner faces three choices: rewind to a lower efficiency; rewind and maintain the original efficiency; or replacement with a new motor. Motor

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[32] http://www.energystar.gov/index.cfm?c=battery_chargers.pr_battery_chargers

[33] http://www.energystar.gov.au/products/scanners.html

[34] http://www.energystar.gov/index.cfm?c=water_coolers.pr_water_coolers

[35] http://www.energystar.gov/index.cfm?c=fryers.pr_fryers

[36] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COG

[37] http://www.energystar.gov/index.cfm?c=hfhc.pr_hfhc

[38] CEE (Consortium for Energy Efficiency) motor nominal efficiencies are higher than the NEMA federal minimum efficiency levels that became effective in December 2010.

rewind follows the Green Motors Practices Group recommendations of best practices to maintain its original efficiency, commonly called a Green Rewind.[39, 40]

Motor—Pump and Fan System—Variable Speed Control. Variable speed controls allow pump and fan motors to operate at lower speeds while still maintaining set points during partial load conditions. Energy reduces when motor operation varies with load rather runs at a constant speed.

Motor—VAV Box High Efficiency (ECM). High-efficiency, fan-powered boxes prevent hot and cold spots by maintaining room air circulation, while modulating supply-air temperatures to match loads. This measure applies to motor efficiency as an upgrade. An ECM powers the fan in each VAV box. An ECM is a brushless DC motor, with all of its speed and torque controls built in electronically, allowing the motor to adjust its speed to ensure optimal airflow at all times. The baseline assumes a standard VAV with induction motors, including silicon controlled rectifier (SCR) speed controls.[41]

Network PC Power Management. This software tool intelligently power manages computers across a network remotely and automatically overnight, on weekends and when not in use. This significantly lowers energy consumption without impacting user productivity. Workstations operating on a local area network (LAN) or a wide area network (WAN) can implement PC power-management policies across a LAN or WAN to maximize energy savings by placing machines into lower power states, without interfering with end-user productivity, desktop maintenance, or upgrades.

Optimized Variable Volume Lab Hood Design. Allows the volumetric flow rate to vary, which causes a constant speed through the duct, regardless of sash opening. For buildings such as universities, schools, and hospitals using lab hoods, savings can be obtained by utilizing a variable, rather than constant, volume lab hood. The baseline measure is a constant volume lab hood.

Power Supply Transformer/Converter. Applies to 80 PLUS performance specification requirements for power supplies in computers and servers. 80 PLUS specifies 80% or greater efficiency at 20%, 50%, and 100% of rated loads, with a true power factor of 0.9 or greater.[42]

Residential Freezer Recycling. This refers to environmentally friendly disposal of unneeded appliances, specifically standalone freezers.

Residential Refrigerator/Freezer Recycling. This refers to environmentally friendly disposal of unneeded appliances, specifically refrigerators.

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[39] http://www.bpa.gov/energy/n/industrial/Green_motors/

[40] http://www.greenmotors.org/downloads/RTFSubmittalMay_08%20_2_.pdf

[41] LEED qualified Justice Center reported by DCJ.com and Minnesota Power Incentive Program

[42] www.80PLUS.org

Server Virtualization. Virtualization involves replacement of multiple, under-utilized servers with a single server operating at a higher utility level. Many data center servers operate at 10% of capacity or less, allowing their functions to be consolidated into "virtual" servers on one unit, operating in the range of 85% of capacity.

Smart Strips. Energy-saving products, such as power strips with an occupancy sensor, are found in workstations where power strips are commonly used. Sensor turn on and off power to all devices, such as computers, desk lights, and audio equipment, plugged into the power strip, based on occupancy within the work area.

Steam Cooker. Commercial ENERGY STAR electric steam cookers have a cooking efficiency of 50%, with idle energy rates varying depending on pan size.[43] The baseline efficiency is 35% for a standard commercial steam cooker.

Commercial Equipment Measure Descriptions

Heating and Cooling

Air or Ground Source Heat Pump (ASHP or GSHP). Electric heat pumps move heat to or from the air or ground to cool and heat homes. Air and ground source heat pumps use a Coefficient of Performance (COP) ratio of the cooling effect produced (expressed in Btu/hr), divided by the energy input (expressed on the same basis and as an EER Ratio). Table B-2.9 displays different efficiency levels compared in this measure.

Table B-2.9. Heat Pump COP/EER Comparisons

kBTU / hr	Measure COP & EER	Baseline COP & EER
ASHP 65–135	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP
ASHP 65–135	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP
GSHP 65–135	16.2 EER, 4.0 COP	11.0 EER, 3.3 COP
ASHP 135–240	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP
GSHP 135– 240	16.2 EER, 4.0 COP	10.6 EER, 3.2 COP

Centrifugal Chiller. A centrifugal chiller utilizes the vapor compression cycle to chill water and reject heat collected from the chilled water, plus heat from the compressor to a second water loop cooled by a cooling tower. The advantage of centrifugal compressors is their high flow rates' capability and good efficiency characteristics. This measure compares different efficiencies greater than 300 tons, rated in kW/ton, shown in Table B-2.10**Error! Reference source not found.**.

Table B-2.10. Centrifugal Chiller kW/ton Comparison

Measure kW / ton	Baseline kW / ton
0.55	0.576
0.52	0.576
0.47	0.576

[43] http://www.energystar.gov/index.cfm?c=steamcookers.pr_steamcookers

Screw Chiller. Screw compressors are positive displacement devices. The refrigerant chamber is actively compressed to a smaller volume by the twisting motion of two interlocking, rotating screws. Refrigerant trapped in the space enclosed between the two rotating screws is compressed as it makes its way from the inlet to the outlet of the compressor. A slide valve adjusts the compression effect by varying the amount of compression occurring before refrigerant is discharged. Screw chillers generally are used for small- to medium-sized buildings. This measure compares different efficiencies, rated in kW/ton, as shown in Table B-2.11.

Table B-2.11. Screw Chiller kW/ton Comparison

Tons	Measure kW / ton	Baseline kW / ton
<150	0.71	0.775
<150	0.63	0.775
<150	0.58	0.775
150-300	0.65	0.68
150-300	0.57	0.68
150-300	0.50	0.68

DX Package. DX systems use a refrigerant piping circuit, compressor, and refrigerant coils to transfer heat. All components are in a single package, typically installed on the building roof. As a measurement of efficiency, commercial sized units are normally rated as an Energy Efficient Ratio (EER). Table B-2.12 displays the different models compared in this measure.

Table B-2.12. DX AC Unit EER / Advanced Technology Comparisons

kBTU / hr	Measure EER	Baseline EER
65–135	11.5	11.2
65–135	12.0	11.2
135–240	11.5	11.0
135–240	12.0	11.0
240–760	10.5	10.0 16 SEER, 8.8 HSPF 16.2 EER, 3.6 COP
240–760	10.8	10.0

Evaporative Cooler, Replaces DX Package. Evaporative coolers, also known as swamp coolers, cool air through simple evaporation of water. Evaporative cooling differs from standard air conditioning, which uses vapor-compression or absorption refrigeration cycles.[44] This measure replaces a DX package.

Packaged Terminal Air Conditioner (PTAC) (10,000 BTU/HR). PTAC units house all components—compressor; condenser and evaporator coils; expansion device; condenser and evaporator fans; and associated operating and control devices—within a single cabinet. In most cases, this package unit is installed within a space, through the wall, as in the lodging segment. The baseline for this measure represents a 10.4 EER, upgraded to an 11.4 EER PTAC.

[44] http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12360

Lighting

Lighting Interior Fluorescent. This measure upgrades fluorescent lighting fixtures to a more efficient lighting technology. A lumen equivalence is used to avoid changing the lighting level by varying the number of fixtures during the upgrade process. If the lumen equivalence happens to be within 10% of the baseline lumens, however, the number of fixtures remains constant. This measure only applies to existing construction. Table B-2.13 displays the different models compared in this measure.

Table B-2.13. Fluorescent Lighting Comparison

Measure	Baseline
Reduced Wattage T8	T8
High Performance T8	T8
T5	T8

Lighting Interior High Intensity Discharge (HID) and High Bay. This measure represents upgrading HID and high bay lighting fixtures to more efficient lighting technologies. A lumen equivalence is used to avoid changing the lighting level by varying the number of fixtures during the upgrade process. If the lumen equivalence happens to be within 10% of the baseline lumens, however, the number of fixtures remains constant. This measure only applies to existing construction. Table B-2.14 displays the different models compared in this measure.

Table B-2.14. HID and High Bay Lighting Comparison

Measure	Baseline
Metal Halide	High Pressure Sodium
Induction	High Pressure Sodium
Efficient Metal Halide	High Pressure Sodium
LED	High Pressure Sodium
T5 High Output	High Pressure Sodium

Lighting Interior Screw Base. This measure upgrades screw-based lighting fixtures to a more efficient lighting technology. A lumen equivalence is used to avoid changing the lighting level by varying the number of fixtures during the upgrade process. If the lumen equivalence happens to be within 10% of the baseline lumens, however, the number of fixtures remains constant. This measure only applies to existing construction. Table B-2.15 displays the different models compared in this measure.

Table B-2.15. Screw Base Lighting Comparison

Measure	Baseline
CFL	Incandescent
LED	Incandescent
CFL	EISA Incandescent
LED	EISA Incandescent

Lighting Package, High Efficiency. This measure represents the achievable lighting percentage decrease in lighting power density. The baseline lighting technology is representative of all available technologies making up the total watts per square foot for that particular building type.

This includes all overhead lighting (e.g., T12, T8, T5 tubes, canned CFLs). The lighting reduction package measures reduce the lighting power density (W/sqft) by installing higher-efficiency technologies, such as high-performance T8 or T5 tubes, high-efficiency ballasts, and reflective lighting fixtures. This measure only applies to new construction.

Water Heating

Storage and Heat Pump Water Heater. High-efficiency water heaters operate more efficiently than standard electric water heaters due to reduced standby losses. Table B-2.16 shows baseline and efficient measure EF values.

Table B-2.16. Water Heater EF Comparisons

Water Heater Capacity	Measure EF	Baseline EF
≤ 55 Gallons	Heat Pump Water Heater = 2.0	2004 Federal Standard = 0.92
≤ 55 Gallons	Heat Pump Water Heater = 2.0	2015 Federal Standard = 0.95
≤ 55 Gallons (WA Only)	RTF Market Standard = 0.93	2004 Federal Standard = 0.92
≤ 55 Gallons (WA Only)	RTF Tier 1 Heat Pump = 1.43	2004 Federal Standard = 0.92
≤ 55 Gallons (WA Only)	RTF Tier 2 Heat Pump = 2.08	2004 Federal Standard = 0.92
≤ 55 Gallons (WA Only)	RTF Tier 1 Heat Pump = 1.43	2015 Federal Standard = 0.95
≤ 55 Gallons (WA Only)	RTF Tier 2 Heat Pump = 2.08	2015 Federal Standard = 0.95
> 55 Gallons	Heat Pump Water Heater = 2.0	2004 Federal Standard = 0.87
> 55 Gallons	Heat Pump Water Heater = 2.0	2015 Federal Standard = 1.97
> 55 Gallons (WA Only)	RTF Market Standard = 1.99	2004 Federal Standard = 0.87
> 55 Gallons (WA Only)	RTF Tier 1 Heat Pump = 2.05	2004 Federal Standard = 0.87
> 55 Gallons (WA Only)	RTF Tier 2 Heat Pump = 2.08	2004 Federal Standard = 0.87
> 55 Gallons (WA Only)	RTF Tier 1 Heat Pump = 2.05	2015 Federal Standard = 1.97
> 55 Gallons (WA Only)	RTF Tier 2 Heat Pump = 2.08	2015 Federal Standard = 1.97

Other

Computer—ENERGY STAR. ENERGY STAR computers consume less than 2 watts in "sleep" and "off" modes, and operate more efficiently than conventional units in "idle" mode, resulting in 32% energy savings.

Copiers—ENERGY STAR. ENERGY STAR copiers deliver the same performance as conventional equipment, and are, on average, 27% more efficient, and power down when not in use. The baseline measure is a non-ENERGY STAR copier.[45]

Fax—ENERGY STAR. ENERGY STAR fax machines enter sleep mode after inactivity, reducing their total power consumption by 50%.[46]

Freezer—Residential. ENERGY STAR-qualified freezers use at least 10% less energy than standard models due to improvements in insulation and compressors. This measure considers the change in 2015 federal standard efficiency levels and three RTF tiers, ranging from 10% to 35%

[45] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CP

[46] http://www.energystar.gov/ia/products/fap/IE_Prog_Req.pdf

more efficient than the 2001 federal standard. Table B-2.17 shows baseline and efficient measures.

Table B-2.17. Freezers Comparison

State	Measure	Baseline
CA, ID, UT, and WY	ENERGY STAR	Federal Standard 2001
CA, ID, UT, and WY	ENERGY STAR	Federal Standard 2015
WA	RTF Market Standard	Federal Standard 2001
WA	RTF Tier 1	Federal Standard 2001
WA	RTF Tier 2	Federal Standard 2001
WA	RTF Tier 3	Federal Standard 2001
WA	RTF Market Standard	Federal Standard 2015
WA	RTF Tier 1	Federal Standard 2015
WA	RTF Tier 2	Federal Standard 2015
WA	RTF Tier 3	Federal Standard 2015

Monitors—ENERGY STAR. ENERGY STAR monitors feature the following: (1) an "on" mode, where the maximum allowed power varies, based on the computer monitor's resolution; (2) a "sleep" mode, where computer monitor models must consume 2 watts or less; and (3) an "off" mode, where computer monitor models must consume 1 watt or less. The baseline equipment does not include these features.[47]

Printers—ENERGY STAR. ENERGY STAR printers deploy a maximum time delay to sleep, depending upon the equipment's size. This reduces power consumption during inactive periods, resulting in 37% energy savings.[48]

Refrigerator—Residential. ENERGY STAR and CEE-qualified refrigerators use at least 20% less energy than standard models, due to improvements in insulation and compressors. This measure considers the change in 2015 federal standard efficiency, and two RTF and two CEE tiers above ENERGY STAR. Table B-2.18 shows baseline and efficient measures.

Table B-2.18. Refrigerator Comparison

State	Measure	Baseline
CA, ID, UT, and WY	ENERGY STAR / CEE Tier 1	Federal Standard 2001
CA, ID, UT, and WY	CEE Tier 2	Federal Standard 2001
CA, ID, UT, and WY	CEE Tier 3	Federal Standard 2001
CA, ID, UT, and WY	ENERGY STAR / CEE Tier 1	Federal Standard 2015
CA, ID, UT, and WY	CEE Tier 2	Federal Standard 2015
CA, ID, UT, and WY	CEE Tier 3	Federal Standard 2015
WA	RTF Market Standard	Federal Standard 2001
WA	RTF Tier 1 (ENERGY STAR)	Federal Standard 2001
WA	RTF Tier 2	Federal Standard 2001
WA	RTF Tier 3	Federal Standard 2001

[47] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.ShowProductGroup&pgw_code=MO

[48] http://www.energystar.gov/ia/products/fap/IE_Prog_Req.pdf

State	Measure	Baseline
WA	RTF Market Standard	Federal Standard 2015
WA	RTF Tier 1 (ENERGY STAR)	Federal Standard 2015
WA	RTF Tier 2	Federal Standard 2015
WA	RTF Tier 3	Federal Standard 2015

Server—ENERGY STAR. Servers must meet energy use guidelines in "off" (less than 2 watts) and "idle" (either 50 watts or 65 watts, according on the category) modes of operation, ensuring energy savings when computers are used and performing a range of tasks as well as when turned off or in a low-power mode.[49]

Vending Machines—High Efficiency. ENERGY STAR new and rebuilt refrigerated beverage vending machines operate 36% more energy efficiently than standard models, using more efficient compressors, fan motors, lighting systems, and low-power mode options during non-use periods.[50]

[49] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CO

[50] http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=VMC

APPENDIX B-3. INDUSTRIAL, IRRIGATION, AND STREET LIGHTING MEASURE DESCRIPTIONS

Fans

Circulating Fans: Circulating fans move ventilation air through buildings efficiently, ensuring adequate temperature control and ventilation. Fans meeting performance standards provide required ventilation efficiently, and use less energy than fans not meeting these performance standards

Fan System Improvements (Fan Equipment Upgrade, Fan System Optimization, Efficient Centrifugal Fan): Includes savings from equipment upgrades (such as using variable-speed drives rather than single-speed drives), and/or improved design of the fan system, such as better fans, ducting, flow designs, and adjustments to system parameters.

Properly Sized Fans: This measure achieves energy savings through improved matching of fan size to system load. This eliminates over- and undersized fans, allowing the system to operate at its peak efficiency.

HVAC

Air Source Heat Pump 65 to 135 kBTU/hr—High Efficiency and Premium Efficiency: Air Source Heat Pump, 65 to 135 kBTU/hr—High Efficiency at 11.5 EER, 3.4 COP or Premium Efficiency at 12.0 EER, 3.8 COP replacing a standard efficiency unit at 11.0 EER, 3.3 COP.

Chillers <150 tons (screw)—High Efficiency, Advanced Efficiency, and Premium Efficiency: Chillers <150 tons (screw)—Advanced Efficiency at 0.58 kW/ton, Premium Efficiency at 0.63 kW/ton, or High Efficiency at 0.71 kW/ton (full load), replacing a standard chiller at 0.775 kW/ton (full load).

DX Package 65 to 135 kBTU/hr - High Efficiency & Premium Efficiency: DX Package 65 to 135 kBTU/hr—High Efficiency at 11.5 EER or Premium Efficiency at 12.0 EER replacing a DX Package 65 to 135 kBTU/hr—Standard Efficiency—11.2 EER.

Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr—Advanced Efficiency: Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr—Advanced Efficiency replacing a DX Package 65 to 135 kBTU/hr—Standard Efficiency—11.2 EER.

Ground Source Heat Pump replaces and Air Source Heat Pump 65 to 135 kBTU/hr—Advanced Efficiency: Ground Source Heat Pump replacing Air Source Heat Pump 65 to 135 kBTU/hr—Standard Efficiency replacing an Air Source Heat Pump 65 to 135 kBTU/hr—Standard Efficiency at 11.0 EER, 3.3 COP

Recommissioning/Facility Energy Management: This measure achieves energy savings for HVAC systems through improved monitoring and verification of building systems. Measurements of operating parameters, analysis of systems, and performance monitoring all lead to energy and demand savings opportunities.

Lighting

Lighting High Bay Improvements (Metal Halide, Induction, Efficient Metal Halide, LED, Linear Florescent): Lighting measures achieve energy savings by replacing high-pressure sodium bulbs.

Lighting Linear Fluorescent Improvements (T8 Reduced Wattage, T8 High Performance, T8, T5): Linear fluorescent lighting measures achieve energy savings by replacing standard T12 linear florescent lamps.

Lighting Screw Base Socket Improvements (EISA Compliant Incandescent, EISA Backstop Incandescent, CFL, LED): Screw base lighting measures achieve energy savings by replacing standard incandescent bulbs.

Motors

Motors Other: Efficiency measures improve motor lubrication and mechanical energy recovery.

Motor Rewinds (Rewind 20–500+): This measure involves rewinding to motors in a controlled environment to minimize or eliminate efficiency losses. Motor rewinds assume rewind techniques consistent with the Green Motors Practices Group™.

Switch from Belt Drive to Direct Drive: This measure improves efficiency through reduction of losses associated with belt drive systems.

Other

Building Improvements: Improvements to the physical plant result in improved efficiency, productivity, or equipment usage.

Transformers: Energy-efficient transformers provide improved power quality while minimizing losses.

Process (Air Compressor, Cooling, Heating, Refrigeration, Other)

Air Compressor Improvements (Demand Reduction, Optimization, Equipment Upgrade)—Process Air Compressor: These measures involve overall improvement of the compressed air system, including improved system design, leak repair, usage practices, more efficient dryer and storage systems, and compressor upgrades.

Clean Room Improvements (Change Filter Strategy, Chiller Optimize, HVAC)—Process Cooling: These measures aim to save energy through improved clean room equipment and practices. Savings result from optimization of chiller operating parameters, upgrading to more efficient equipment, and improving filter replacement strategies.

Cold Storage Retrofit—Process Refrigeration: Upgrading mechanical equipment to provide cooling to cold storage areas within each facility type. Retrofits may include compressors, heat rejection equipment, evaporators and fans, or other equipment resulting in greater system efficiency.

Cold Storage Tune-up—Process Refrigeration: Maintaining and enhancing equipment responsible for providing cooling to cold storage areas within each facility type. Tune-up may include refrigerant charge, equipment cleaning, general maintenance, and improved practices.

Electric Chip Fab Improvements (Eliminate Exhaust, Exhaust Injector, Reduce Gas Pressure, Solidstate Chiller)—Process Other: These general improvements increase efficiency in the electric chip fabrication process.

Equipment: Chillers (Process Cool): This measure involves upgrading chilling systems providing process cooling. Savings results from improved chiller efficiencies.

General Process Improvements (Paper: Premium Fan, Paper: Large Material Handling, Paper: Material Handling, Paper: Premium Control Large Material, Panel: Hydraulic Press, Paper: Efficient Pulp Screen, Kraft: Efficient Agitator, Kraft: Effluent Treatment System, Mechanical Pulp: Premium Process, Mechanical Pulp: Refine Plate Improvement, Wood: Replace Pneumatic Conveyor, Metal: New Arc Furnace, Material Handling, Material Handling VFD): Generic process improvements/O&M measures that include: upgrading equipment, replacing hydraulic/pneumatic equipment with electrical equipment, and using optimum size and capacity equipment.

High-Efficiency Compressor motors (Process Air Compressor): Upgrading air compressor motors to higher name plate efficiency values.

Low Pressure-drop Filters (Process Air Compressor): A type of coalescing filter designed to remove solids and aerosols from compressed air systems. These filters induce a lower pressure drop, compared to standard air filters, therefore requiring less fan energy to move air across them. These filters also have a longer useful life than standard filters.

Outside Air Intake (Process Air Compressor): An air compressor system design retrofit, pulling in air from a cooler outside environment (as opposed to the warmer room, in which the air compressor is located). Cooler air is denser, increasing the mass flow rate of air into the compressor, and improving system efficiency.

Process Heat O&M (Process Heating): Operation and maintenance practices for process heating equipment, including equipment maintenance, using optimum size and capacity equipment, and developing best-practices guidelines.

Receiver Capacity Addition (Process Air Compressor): Adding receiver volume to a compressed air system allows the compressor to cycle less frequently, permits the system to operate at lower average pressures, and reduces average compressor power.

Refrigeration Improvements (Food: Cooling and Storage, Optimization of Operating Parameters)—Process Cooling: Refrigeration improvements can include: isolating hot equipment from refrigerated area; using highest allowable temperature for refrigerated space; or modifying refrigeration system to operate at a lower pressure.

Refrigerated Cycling Dryers (Process Air Compressor): When compressed air flow runs at less than the full rated capacity, a cycling refrigerated dryer shuts off, using less energy than a non-cycling dryer (which runs continuously, regardless of air flow).

VFD Controlled Compressor (Process Air Compressor): This measure improves energy efficiency of compressed air systems by modulating compressors to match facility demand for compressed air. Energy is saved by throttling compressors back during non-peak periods.

Zero Loss Condensate Drain (Process Air Compressor): Condensate drains are used to remove liquid water from compressed air systems. Zero loss drains allow condensate water to drain out of the system as needed, without venting compressed air, thus improving system efficiency.

Pumps

Pump Equipment Upgrade: Efficient pumps achieve energy savings through improved pump design and sizing.

Pump System Optimization: This measure involves overall optimization of the pump system, including: improved system design, enhanced flow design, better maintenance practices, and adjustments to system parameters.

Multiple End Uses

Facility Energy Management (Fans, Lighting, Motors, Other, Process, Pumps): Includes synergistic savings opportunities of plant-wide energy management and improvements across multiple systems, such as compressed air, pumping, and fan systems. For this study, facility energy management only includes operational and maintenance (non-equipment) measures.

High-Efficiency Motors (Fans, Motors, Process Air Compressors, Pumps): This measure involves upgrading motors to higher name plate efficiency values. As NEMA Premium motors became the baseline code requirement in 2010, this measure has been based on Super Premium motors, which have efficiency levels at least one efficiency band above NEMA Premium.

Improved Controls (Fans, HVAC, Motors, Process-Air Compressors, Process-Cooling, Process Heat): These measures include savings from equipment upgrades (such as variable-speed drives) as well as energy improvements from enhanced monitoring, data collection, and load matching for each system.

Synchronous Belts (Fans, Motors, Process-Refrigeration, Pumps): Synchronous belts contain grooves that mate with corresponding grooves in the drive sprocket, preventing slip, thus reducing energy losses.

Irrigation Electric Measure Descriptions

High-Efficiency Motors (Irrigation): This measure involves upgrading motors to higher name plate efficiency values. As NEMA Premium motors became the baseline code requirement in 2010, this measure has been based on Super Premium motors, which have efficiency levels at least one efficiency band above NEMA Premium.

Scientific Irrigation Scheduling (SIS): SIS allows irrigators to use a scientific approach to their irrigation practices, including timing and volume.

System Improvements: These irrigation improvements include: replacing worn equipment; fixing leaks; adopting low-pressure irrigation systems; and other general irrigation maintenance and upgrades.

Agriculture Measure Descriptions

Agricultural Engine Block Heater Timers: Block heaters are electrical heaters, designed to keep tractors and other diesel engines warm, protecting them from freeze damage and to ease starting in cold weather. A block heater is only required for a few hours to sufficiently warm an engine block, but they typically operate overnight. A block heater timer saves energy by reducing the number of hours the heater runs.

Automatic Milker Takeoffs: The automatic take-off system presets flow levels at which milking claws are removed, preventing over-milking, and reducing run-times of vacuum systems.

Heat Lamps: This measure provides radiant heat to warm pigs, chicks, lambs, or calves. Changing to lower wattage, higher-efficiency heat lamps helps save electricity.

Heat Lamp Setback (Microzone): This measure saves energy by automatically adjusting power to heat lamps, compensating for fluctuations in room temperatures. Lamp life is also extended due to reduced usage. An additional benefit results from power being restored slowly after a power outage, reducing peak demand on the power utility or a backup generator.

Heat Lamp/Heating Pad Controller: This measure allows producers to adjust the heat output of bulbs or pads. By only applying the minimum power needed, energy waste is reduced and equipment life extended.

Heat Reclaimer: Hot water is used to clean milk pipes and sanitize work areas. A heat reclaimer takes waste heat from the milk refrigeration process, using it to preheat water to reduce heating loads on primary water heaters.

High-Efficiency Ventilation System: These ventilation systems ensure adequate temperature controls and ventilation for livestock by bringing in or exhausting air to facilities. Fans meeting performance standards provide the required ventilation efficiently, using less energy than fans not meeting these performance standards.

Livestock Waterers: Energy-efficient livestock waterers have 2 inches or more of insulation, completely surrounding the inside of the waterer, and an adjustable thermostat.

Milk Precooler: Milk coming from an automatic milker must be cooled to help preserve it, and to prepare it for processing and shipment. The milk pre-cooler is a heat exchanger, using well water to begin cooling milk before it enters the bulk cooling tank. Precooling lowers the load on the refrigeration system, and is more efficient. Additional pump energy is more than offset by reductions in compressor energy consumption.

Programmable Ventilation Controller: Programmable ventilation controllers vary the speed of ventilation fans to meet a facility's immediate needs. Ventilation controllers ensure proper ventilation and temperature control, while minimizing run times of ventilation fans.

VFDs—Potato/Onion Shed: These measures improve energy efficiency by matching energy used by pumps and fans with required loads. Energy is saved when systems operate at a partial load, precluding the need for full pump/fan capacity.

VFDs for Dairy Vacuum Pumps: These measures improve energy efficiency by matching energy used by pumps and fans with required loads. Energy is saved when systems operate at a partial load, precluding the need for full pump/fan capacity.

Street Lighting Measure Descriptions

LED Street Lights: LED street lights can replace standard high-pressure sodium (HPS) street lights, with similar lumens achieved with less wattage. Table B-3.1 compares HPS and LED wattages considered in this study.

Table B-3.1. Comparison of HPS and LED Street Light Bulbs

HPS Bulb Wattage	LED Equivalent Bulb Wattage
100	78
150	106
250	166
400	258

APPENDIX B-4. ADMINISTRATIVE COST BENCHMARKING

The following table provides data from the review of recent annual reports to estimate administrative costs as a portion of incremental measure cost for utility energy-efficiency portfolios.

Table B-4.1. Summary of Administrative Costs by Utility

Year	Utility	State	Administrative Cost	Incremental Measure Cost	Admin/Incremental Measure Cost
2011	Alliant	Iowa	$8,361,779	$62,452,088	13.4%
2010	Avista	Washington	$2,329,501	$18,486,571	12.6%
2010	Avista	Idaho	$1,581,520	$7,592,795	20.8%
2010	National Grid	Massachusetts	$9,106,873	$51,172,384	17.8%
2010	Nstar	Massachusetts	$30,537,198	$103,486,701	29.5%
2010	Puget Sound Energy	Washington	$17,576,267	$97,161,866	18.1%
2011	Xcel Energy	Colorado	$22,685,018	$52,648,545	43.1%
2010	Xcel Energy	Minnesota	$19,300,845	$71,306,374	27.1%
				Average (including Xcel Energy Colorado)	22.8%
				Average (excluding Xcel Energy Colorado)	19.9%

APPENDIX C

APPENDIX C-1. TECHNICAL SUPPLEMENTS: ENERGY EFFICIENCY RESOURCES, MARKET SEGMENTATION

Appendix C-1 provides details on the Class 2 market segmentation.

Tables C-1.1 and C-1.2 show the commercial, industrial, irrigation, and street lighting segments and end uses modeled in each state.[1]

Tables C-1.3 through C-1.7 show equipment saturations, fuel shares, efficiency shares, and unit energy consumptions (UECs) for all residential end uses. Saturations represent the average number of units in a building. Fuel shares represent the percent of units that are electric. The "share of equipment above standard" reflects the percent of units that are more efficient than equipment that meets minimum federal standards in 2012.

For central cooling, this share includes evaporative coolers, which were considered as above standard equipment. Weighted average UECs reflect average annual consumption for a given end use. Averages are weighted by the distribution of equipment efficiencies for each end use. For some end uses, UECs for new construction differ from existing construction due to federal standards.

Tables C-1.8 through C-1.12 show saturations, fuel shares, efficiency shares, and energy use intensities (EUIs) for commercial end uses. Commercial heating and cooling saturations reflect the average percent of floor space that is heated or cooled. Commercial water heating and refrigeration saturations represent the percent of facilities with the end use. Saturations are embedded in lighting and plug load EUIs.

Cadmus modeled lighting in commercial new construction as one end use to capture the lighting power density (LPD) improvements required by code. For this reason, the "Lighting Interior Other" represents all lighting technologies for new construction.

Cadmus modeled data centers using a top-down approach, outside of the commercial model. Table C-1.13 shows base year data center consumption by end use. Data center consumption was informed by PacifiCorp's load forecast and secondary research.[2]

Table C-1.14 show the shares of end use consumption used in the modeling of the industrial sector.

[1] All residential end uses, with the exception of pool pumps, listed in Table 39 of Volume I were modeled in each residential segment (single family, multifamily, and manufactured). Pool pumps were only modeled for single family homes.

[2] Data center end use consumption: http://hightech.lbl.gov/documents/data_centers/aceee162.pdf

Table C-1.1. Commercial Segment End Use Combinations

Segment	Computers	Cooking	Cooling DX	Cooling Room	Cooling Chillers	Fans[a]	Heat Pump	HVAC[a]	HVAC Aux	Lighting	Other Office Equipment[b]	Other Plug Load[c]	Refrigeration	Space Heat	Water Heat
Data Center						UT		UT		UT	UT				
Grocery	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY				CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Health	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Large Office	ID, UT, WA, WY		ID, UT, WA, WY		ID, UT, WA, WY		ID, UT, WA, WY		ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY		ID, UT, WA, WY	ID, UT, WA, WY
Large Retail	ID, UT, WA, WY		ID, UT, WA, WY				ID, UT, WA, WY		ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY		ID, UT, WA, WY	ID, UT, WA, WY
Lodging	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Miscellaneous	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Restaurant	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY				CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
School	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Small Office	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY				CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Small Retail	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY				CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY

Segment	Computers	Cooking	Cooling DX	Cooling Room	Cooling Chillers	Fans[a]	Heat Pump	HVAC[a]	HVAC Aux	Lighting	Other Office Equipment[b]	Other Plug Load[c]	Refrigeration	Space Heat	Water Heat
Warehouse	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Warehouse Controlled Atmosphere										WA			WA		

Notes:

[a] Data center (Fans and HVAC)-only end use.

[b] Other Office Equipment includes fax machines, flat screen monitors, photo copiers, printers, and servers.,

[c] Other Plug Load includes refrigerators, freezers, and vending machines.

Table C-1.2. Industrial, Irrigation, and Street Lighting Segment End Use Combinations

Segment	Fans	HVAC	Indirect Boiler	Lighting	Motors Other	Other	Process Aircomp	Process Cool	Process Electro Chemical	Process Heat	Process Other	Process Refrigeration	Pumps
Agriculture	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY		CA, ID, UT, WA, WY			CA, ID, UT, WA, WY
Chemical Mfg	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY
Data Center	UT	UT		UT		UT							
Electronic Equipment Mfg	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY	ID, UT, WA, WY
Food Mfg	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Industrial Machinery	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Irrigation						CA, ID, UT, WA, WY							CA, ID, UT, WA, WY
Lumber Wood Products	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Mining					UT, WY					UT, WY	UT, WY		UT, WY
Miscellaneous Mfg	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Paper Mfg	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA	UT, WA
Petroleum Refining	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Metal Mfg	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY

Segment	Fans	HVAC	Indirect Boiler	Lighting	Motors Other	Other	Process Aircomp	Process Cool	Process Electro Chemical	Process Heat	Process Other	Process Refrigeration	Pumps
Stone Clay Glass Products	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY		CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Street Lighting				CA, ID, UT,WA, WY									
Transportation Equipment Mfg	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY
Wastewater				ID, UT, WA, WY		ID, UT, WA, WY	ID, UT, WA, WY						ID, UT, WA, WY
Water	CA, ID, UT, WA, WY			CA, ID, UT, WA, WY	CA, ID, UT, WA, WY	CA, ID, UT, WA, WY							CA, ID, UT, WA, WY

Table C-1.3. California Residential Saturations, Fuel Shares, Share Above Standard and UECs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Manufactured	Computer	0.81	100%	60%	193	184
Manufactured	Cooking Oven	1.00	77%	5%	105	105
Manufactured	Cooking Range	1.00	86%	0%	53	53
Manufactured	Cool Central	0.33	100%	56%	964	553
Manufactured	Cool Room	0.08	100%	42%	496	333
Manufactured	DVD	0.72	100%	63%	22	21
Manufactured	Dryer	0.99	95%	2%	707	683
Manufactured	Freezer	0.55	100%	20%	421	400
Manufactured	Heat Central	0.53	85%	0%	9,718	6,895
Manufactured	Heat Pump	0.11	100%	11%	4,432	2,904
Manufactured	Heat Room	0.21	16%	7%	8,679	6,438
Manufactured	Home Audio System	0.79	100%	34%	103	96
Manufactured	Lighting Interior Specialty	5.55	100%	30%	24	24
Manufactured	Lighting Standard	31.46	100%	30%	30	30
Manufactured	Microwave	0.98	100%	2%	148	148
Manufactured	Monitor	0.69	100%	70%	56	60
Manufactured	Other	1.00	100%	0%	1,099	1,099
Manufactured	Plug Load Other	1.00	100%	0%	589	589
Manufactured	Printer	0.77	100%	70%	169	142
Manufactured	Refrigerator	1.09	100%	40%	425	428
Manufactured	Set Top Box	0.53	100%	51%	206	204
Manufactured	TV	1.21	100%	74%	195	187
Manufactured	Ventilation And Circulation	0.58	100%	5%	443	443
Manufactured	Water Heat GT 55 Gal	0.08	91%	5%	2,158	2,249
Manufactured	Water Heat LE 55 Gal	0.93	91%	5%	2,109	2,107
Multifamily	Computer	0.55	100%	60%	193	184
Multifamily	Cooking Oven	1.00	73%	5%	105	105
Multifamily	Cooking Range	1.00	88%	0%	53	53
Multifamily	Cool Central	0.03	100%	9%	1,333	795
Multifamily	Cool Room	0.34	100%	41%	417	354
Multifamily	Copier	0.05	100%	85%	144	152
Multifamily	DVD	0.45	100%	63%	22	21
Multifamily	Dehumidifier	0.01	100%	0%	882	853
Multifamily	Dryer	0.41	100%	2%	489	472
Multifamily	Freezer	0.03	100%	20%	421	400
Multifamily	Heat Central	0.11	25%	0%	6,189	5,375
Multifamily	Heat Pump	0.24	100%	10%	2,835	2,257
Multifamily	Heat Room	0.67	77%	0%	5,825	5,145
Multifamily	Home Audio System	0.64	100%	34%	103	96
Multifamily	Lighting Interior Specialty	3.98	100%	30%	24	24

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Multifamily	Lighting Standard	22.54	100%	30%	30	30
Multifamily	Microwave	0.85	100%	2%	148	148
Multifamily	Monitor	0.48	100%	70%	56	60
Multifamily	Other	1.00	100%	0%	1,099	1,099
Multifamily	Plug Load Other	1.00	100%	0%	289	289
Multifamily	Printer	0.76	100%	70%	169	142
Multifamily	Refrigerator	1.05	100%	33%	430	433
Multifamily	Set Top Box	0.57	100%	51%	206	204
Multifamily	TV	1.12	100%	74%	195	187
Multifamily	Ventilation And Circulation	0.12	100%	5%	317	317
Multifamily	Water Heat GT 55 Gal	0.08	81%	5%	1,493	1,556
Multifamily	Water Heat LE 55 Gal	0.93	81%	5%	1,459	1,458
Single Family	Computer	1.02	100%	60%	193	184
Single Family	Cooking Oven	1.00	77%	5%	105	105
Single Family	Cooking Range	1.00	81%	0%	53	53
Single Family	Cool Central	0.24	100%	41%	1,382	753
Single Family	Cool Room	0.19	100%	41%	471	395
Single Family	Copier	0.10	100%	85%	144	152
Single Family	DVD	0.99	100%	63%	22	21
Single Family	Dehumidifier	0.02	100%	0%	882	853
Single Family	Dryer	0.96	94%	2%	842	813
Single Family	Freezer	0.64	100%	20%	421	400
Single Family	Heat Central	0.30	22%	0%	10,240	7,929
Single Family	Heat Pump	0.14	100%	11%	4,628	3,295
Single Family	Heat Room	0.38	24%	2%	9,305	7,464
Single Family	Home Audio System	0.79	100%	34%	103	96
Single Family	Lighting Interior Specialty	6.85	100%	30%	24	24
Single Family	Lighting Standard	38.84	100%	30%	30	30
Single Family	Microwave	0.94	100%	2%	148	148
Single Family	Monitor	0.77	100%	70%	56	60
Single Family	Other	1.00	100%	0%	1,099	1,099
Single Family	Plug Load Other	1.00	100%	0%	837	837
Single Family	Pool Pump	0.00	100%	3%	922	922
Single Family	Printer	1.07	100%	70%	169	142
Single Family	Refrigerator	1.14	100%	35%	429	432
Single Family	Set Top Box	0.55	100%	51%	206	204
Single Family	TV	1.45	100%	74%	195	187
Single Family	Ventilation And Circulation	0.33	100%	5%	547	547
Single Family	Water Heat GT 55 Gal	0.08	83%	5%	2,570	2,678
Single Family	Water Heat LE 55 Gal	0.93	83%	5%	2,512	2,509

Table C-1.4. Idaho Residential Saturations, Fuel Shares, Share Above Standard, and UECs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Manufactured	Computer	0.71	100%	60%	193	184
Manufactured	Cooking Oven	1.00	62%	5%	105	105
Manufactured	Cooking Range	1.00	60%	0%	53	53
Manufactured	Cool Central	0.38	100%	71%	410	238
Manufactured	Cool Room	0.33	100%	41%	511	250
Manufactured	Copier	0.06	100%	85%	144	152
Manufactured	DVD	1.09	100%	63%	22	21
Manufactured	Dryer	1.02	87%	2%	987	953
Manufactured	Freezer	0.74	100%	20%	407	387
Manufactured	Heat Central	0.80	58%	0%	17,576	9,342
Manufactured	Heat Room	0.07	67%	0%	15,789	8,650
Manufactured	Home Audio System	0.79	100%	34%	103	96
Manufactured	Lighting Interior Specialty	5.46	100%	28%	23	23
Manufactured	Lighting Standard	30.91	100%	28%	29	29
Manufactured	Microwave	0.98	100%	2%	148	148
Manufactured	Monitor	0.61	100%	70%	56	60
Manufactured	Plug Load Other	1.00	100%	0%	710	710
Manufactured	Printer	0.88	100%	70%	169	142
Manufactured	Refrigerator	1.04	100%	49%	405	409
Manufactured	Set Top Box	0.28	100%	51%	206	204
Manufactured	TV	1.48	100%	74%	195	187
Manufactured	Ventilation And Circulation	0.81	100%	5%	647	647
Manufactured	Water Heat GT 55 Gal	0.08	58%	5%	3,308	3,448
Manufactured	Water Heat LE 55 Gal	0.93	58%	6%	3,223	3,230
Multifamily	Computer	0.65	100%	60%	193	184
Multifamily	Cooking Oven	1.00	77%	5%	105	105
Multifamily	Cooking Range	1.00	85%	0%	53	53
Multifamily	Cool Central	0.53	100%	9%	1,070	601
Multifamily	Cool Room	0.06	100%	41%	496	269
Multifamily	DVD	0.69	100%	63%	22	21
Multifamily	Dehumidifier	0.05	100%	0%	882	853
Multifamily	Dryer	0.74	89%	2%	649	626
Multifamily	Freezer	0.31	100%	20%	407	387
Multifamily	Heat Central	0.63	20%	0%	14,657	9,060
Multifamily	Heat Room	0.38	89%	0%	13,833	8,695
Multifamily	Home Audio System	0.74	100%	34%	103	96
Multifamily	Lighting Interior Specialty	5.10	100%	28%	23	23
Multifamily	Lighting Standard	28.91	100%	28%	29	29
Multifamily	Microwave	1.00	100%	2%	148	148
Multifamily	Monitor	0.46	100%	70%	56	60

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Multifamily	Plug Load Other	1.00	100%	0%	291	291
Multifamily	Printer	0.55	100%	70%	169	142
Multifamily	Refrigerator	1.08	100%	33%	416	419
Multifamily	Set Top Box	0.36	100%	51%	206	204
Multifamily	TV	1.15	100%	74%	195	187
Multifamily	Ventilation And Circulation	0.64	100%	5%	605	605
Multifamily	Water Heat GT 55 Gal	0.08	50%	5%	2,174	2,266
Multifamily	Water Heat LE 55 Gal	0.93	50%	6%	2,116	2,123
Single Family	Computer	1.20	100%	60%	193	184
Single Family	Cooking Oven	1.00	73%	5%	105	105
Single Family	Cooking Range	1.00	77%	0%	53	53
Single Family	Cool Central	0.27	100%	33%	1,098	558
Single Family	Cool Room	0.21	100%	41%	676	382
Single Family	Copier	0.12	100%	85%	144	152
Single Family	DVD	1.23	100%	63%	22	21
Single Family	Dehumidifier	0.00	100%	0%	882	853
Single Family	Dryer	1.03	83%	2%	1,118	1,079
Single Family	Freezer	0.83	100%	20%	407	387
Single Family	Heat Central	0.59	10%	0%	22,725	13,447
Single Family	Heat Pump	0.01	100%	10%	11,568	6,644
Single Family	Heat Room	0.29	71%	0%	20,376	12,544
Single Family	Home Audio System	0.79	100%	34%	103	96
Single Family	Lighting Interior Specialty	8.09	100%	28%	23	23
Single Family	Lighting Standard	45.82	100%	28%	29	29
Single Family	Microwave	0.95	100%	2%	148	148
Single Family	Monitor	0.92	100%	70%	56	60
Single Family	Plug Load Other	1.00	100%	0%	715	715
Single Family	Pool Pump	0.01	100%	3%	1,369	1,369
Single Family	Printer	0.98	100%	70%	169	142
Single Family	Refrigerator	1.11	100%	46%	407	410
Single Family	Set Top Box	0.46	100%	51%	206	204
Single Family	TV	1.69	100%	74%	195	187
Single Family	Ventilation And Circulation	0.60	100%	5%	958	958
Single Family	Water Heat GT 55 Gal	0.08	49%	5%	3,748	3,906
Single Family	Water Heat LE 55 Gal	0.93	49%	6%	3,647	3,659

Table C-1.5. Utah Residential Saturations, Fuel Shares, Share Above Standard, and UECs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Manufactured	Computer	1.00	100%	60%	193	184
Manufactured	Cooking Oven	1.00	38%	5%	105	105
Manufactured	Cooking Range	1.00	31%	0%	53	53
Manufactured	Cool Central	1.00	100%	82%	679	462
Manufactured	Copier	0.06	100%	85%	144	152
Manufactured	DVD	1.00	100%	63%	22	21
Manufactured	Dryer	0.87	92%	2%	871	841
Manufactured	Freezer	0.31	100%	20%	486	463
Manufactured	Heat Central	0.92	6%	0%	8,993	4,668
Manufactured	Heat Room	0.08	0%	0%	8,117	4,328
Manufactured	Home Audio System	0.79	100%	34%	103	96
Manufactured	Lighting Interior Specialty	4.56	100%	30%	28	28
Manufactured	Lighting Standard	25.82	100%	30%	34	34
Manufactured	Microwave	0.94	100%	2%	148	148
Manufactured	Monitor	0.88	100%	70%	56	60
Manufactured	Plug Load Other	1.00	100%	0%	363	363
Manufactured	Printer	0.88	100%	70%	169	142
Manufactured	Refrigerator	1.00	100%	41%	490	496
Manufactured	Set Top Box	0.28	100%	51%	206	204
Manufactured	TV	1.75	100%	74%	195	187
Manufactured	Ventilation And Circulation	0.94	100%	5%	380	380
Manufactured	Water Heat GT 55 Gal	0.08	20%	5%	2,486	2,591
Manufactured	Water Heat LE 55 Gal	0.93	20%	5%	2,433	2,427
Multifamily	Computer	0.90	100%	60%	193	184
Multifamily	Cooking Oven	1.00	85%	5%	105	105
Multifamily	Cooking Range	1.00	85%	0%	53	53
Multifamily	Cool Central	0.87	100%	26%	1,879	1,122
Multifamily	Cool Room	0.23	100%	41%	565	547
Multifamily	DVD	1.15	100%	63%	22	21
Multifamily	Dehumidifier	0.05	100%	0%	882	853
Multifamily	Dryer	0.88	91%	2%	759	733
Multifamily	Freezer	0.23	100%	20%	486	463
Multifamily	Heat Central	0.78	9%	0%	10,197	6,193
Multifamily	Heat Room	0.17	67%	0%	9,656	5,949
Multifamily	Home Audio System	0.74	100%	34%	103	96
Multifamily	Lighting Interior Specialty	5.96	100%	30%	28	28
Multifamily	Lighting Standard	33.76	100%	30%	34	34
Multifamily	Microwave	0.92	100%	2%	148	148
Multifamily	Monitor	0.69	100%	70%	56	60
Multifamily	Plug Load Other	1.00	100%	0%	390	390

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Multifamily	Printer	0.55	100%	70%	169	142
Multifamily	Refrigerator	1.03	100%	35%	495	501
Multifamily	Set Top Box	0.36	100%	51%	206	204
Multifamily	TV	1.41	100%	74%	195	187
Multifamily	Ventilation And Circulation	0.79	100%	5%	496	496
Multifamily	Water Heat GT 55 Gal	0.08	27%	5%	2,168	2,260
Multifamily	Water Heat LE 55 Gal	0.93	27%	5%	2,123	2,117
Single Family	Computer	1.38	100%	60%	193	184
Single Family	Cooking Oven	1.00	67%	5%	105	105
Single Family	Cooking Range	1.00	66%	0%	53	53
Single Family	Cool Central	0.96	100%	42%	2,172	1,244
Single Family	Cool Room	0.04	100%	44%	638	509
Single Family	Copier	0.12	100%	85%	144	152
Single Family	DVD	1.34	100%	63%	22	21
Single Family	Dehumidifier	0.00	100%	0%	882	853
Single Family	Dryer	1.04	76%	2%	1,110	1,072
Single Family	Freezer	0.58	100%	20%	486	463
Single Family	Heat Central	0.87	7%	0%	15,295	9,036
Single Family	Heat Pump	0.01	100%	10%	7,175	3,950
Single Family	Heat Room	0.09	39%	0%	14,159	8,555
Single Family	Home Audio System	0.79	100%	34%	103	96
Single Family	Lighting Interior Specialty	9.29	100%	30%	28	28
Single Family	Lighting Standard	52.63	100%	30%	34	34
Single Family	Microwave	0.95	100%	2%	148	148
Single Family	Monitor	0.98	100%	70%	56	60
Single Family	Plug Load Other	1.00	100%	0%	530	530
Single Family	Pool Pump	0.01	100%	3%	1,369	1,369
Single Family	Printer	0.98	100%	70%	169	142
Single Family	Refrigerator	1.11	100%	56%	478	484
Single Family	Set Top Box	0.46	100%	51%	206	204
Single Family	TV	1.72	100%	74%	195	187
Single Family	Ventilation And Circulation	0.89	100%	5%	774	774
Single Family	Water Heat GT 55 Gal	0.08	11%	5%	3,170	3,304
Single Family	Water Heat LE 55 Gal	0.93	11%	5%	3,101	3,095

Table C-1.6. Washington Residential Saturations, Fuel Shares, Share Above Standard, and UECs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Manufactured	Computer	0.72	100%	60%	193	184
Manufactured	Cooking Oven	1.00	73%	5%	105	105
Manufactured	Cooking Range	1.00	89%	0%	53	53
Manufactured	Cool Central	0.88	100%	15%	1,368	716
Manufactured	Cool Room	0.23	100%	42%	428	307
Manufactured	DVD	0.83	100%	63%	22	21
Manufactured	Dryer	0.98	98%	2%	909	877
Manufactured	Freezer	0.74	100%	100%	328	328
Manufactured	Heat Central	0.60	100%	0%	13,417	6,043
Manufactured	Heat Pump	0.31	100%	10%	6,433	2,736
Manufactured	Heat Room	0.12	29%	0%	12,260	5,686
Manufactured	Home Audio System	0.79	100%	34%	103	96
Manufactured	Lighting Interior Specialty	5.39	100%	33%	23	23
Manufactured	Lighting Standard	30.53	100%	33%	28	28
Manufactured	Microwave	0.94	100%	2%	148	148
Manufactured	Monitor	0.65	100%	70%	56	60
Manufactured	Other	1.00	100%	0%	1,767	1,767
Manufactured	Plug Load Other	1.00	100%	0%	687	687
Manufactured	Printer	0.77	100%	70%	169	142
Manufactured	Refrigerator	1.25	100%	100%	344	344
Manufactured	Set Top Box	0.53	100%	51%	206	204
Manufactured	TV	1.46	100%	74%	195	187
Manufactured	Ventilation And Circulation	0.66	100%	0%	352	352
Manufactured	Water Heat GT 55 Gal	0.08	98%	5%	2,571	2,680
Manufactured	Water Heat LE 55 Gal	0.93	98%	0%	2,516	2,516
Multifamily	Computer	0.61	100%	60%	193	184
Multifamily	Cooking Oven	1.00	83%	5%	105	105
Multifamily	Cooking Range	1.00	83%	0%	53	53
Multifamily	Cool Central	0.69	100%	9%	1,206	701
Multifamily	Cool Room	0.67	100%	41%	369	319
Multifamily	Copier	0.05	100%	85%	144	152
Multifamily	DVD	0.86	100%	63%	22	21
Multifamily	Dehumidifier	0.01	100%	0%	882	853
Multifamily	Dryer	0.76	100%	2%	726	701
Multifamily	Freezer	0.22	100%	0%	400	400
Multifamily	Heat Central	0.46	18%	0%	9,877	5,893
Multifamily	Heat Pump	0.06	100%	3%	4,770	2,663
Multifamily	Heat Room	0.45	90%	0%	9,405	5,705
Multifamily	Home Audio System	0.64	100%	34%	103	96
Multifamily	Lighting Interior Specialty	4.39	100%	33%	23	23

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Multifamily	Lighting Standard	24.88	100%	33%	28	28
Multifamily	Microwave	0.96	100%	2%	148	148
Multifamily	Monitor	0.57	100%	70%	56	60
Multifamily	Other	1.00	100%	0%	1,767	1,767
Multifamily	Plug Load Other	1.00	100%	0%	290	290
Multifamily	Printer	0.76	100%	70%	169	142
Multifamily	Refrigerator	1.28	100%	100%	376	376
Multifamily	Set Top Box	0.57	100%	51%	206	204
Multifamily	TV	1.76	100%	74%	195	187
Multifamily	Ventilation And Circulation	0.51	100%	0%	287	287
Multifamily	Water Heat GT 55 Gal	0.08	83%	5%	2,055	2,142
Multifamily	Water Heat LE 55 Gal	0.93	83%	0%	2,011	2,011
Single Family	Computer	1.15	100%	60%	193	184
Single Family	Cooking Oven	1.00	77%	5%	105	105
Single Family	Cooking Range	1.00	79%	0%	53	53
Single Family	Cool Central	0.81	100%	14%	1,732	875
Single Family	Cool Room	0.28	100%	42%	425	324
Single Family	Copier	0.10	100%	85%	144	152
Single Family	DVD	1.13	100%	63%	22	21
Single Family	Dehumidifier	0.02	100%	0%	882	853
Single Family	Dryer	1.00	95%	2%	997	963
Single Family	Freezer	0.86	100%	0%	400	400
Single Family	Heat Central	0.59	18%	0%	16,254	8,792
Single Family	Heat Pump	0.18	100%	3%	7,685	3,946
Single Family	Heat Room	0.18	53%	0%	15,111	8,439
Single Family	Home Audio System	0.79	100%	34%	103	96
Single Family	Lighting Interior Specialty	7.80	100%	33%	23	23
Single Family	Lighting Standard	44.20	100%	33%	28	28
Single Family	Microwave	0.95	100%	2%	148	148
Single Family	Monitor	0.95	100%	70%	56	60
Single Family	Other	1.00	100%	0%	1,767	1,767
Single Family	Plug Load Other	1.00	100%	0%	731	731
Single Family	Pool Pump	0.05	100%	3%	922	922
Single Family	Printer	1.07	100%	70%	169	142
Single Family	Refrigerator	1.40	100%	100%	376	376
Single Family	Set Top Box	0.55	100%	51%	206	204
Single Family	TV	1.69	100%	74%	195	187
Single Family	Ventilation And Circulation	0.65	100%	0%	510	510
Single Family	Water Heat GT 55 Gal	0.08	69%	5%	2,823	2,942
Single Family	Water Heat LE 55 Gal	0.93	69%	0%	2,762	2,762

Table C-1.7. Wyoming Residential Saturations, Fuel Shares, Share Above Standard, and UECs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Manufactured	Computer	0.75	100%	60%	193	184
Manufactured	Cooking Oven	1.00	38%	5%	105	105
Manufactured	Cooking Range	1.00	27%	0%	53	53
Manufactured	Cool Central	0.97	100%	79%	372	237
Manufactured	Cool Room	0.23	100%	41%	459	275
Manufactured	Copier	0.06	100%	85%	144	152
Manufactured	DVD	0.95	100%	63%	22	21
Manufactured	Dryer	1.00	94%	2%	946	913
Manufactured	Freezer	0.57	100%	20%	437	416
Manufactured	Heat Central	0.84	21%	0%	16,200	8,514
Manufactured	Heat Room	0.12	33%	0%	14,800	7,947
Manufactured	Home Audio System	0.79	100%	34%	103	96
Manufactured	Lighting Interior Specialty	5.16	100%	30%	25	25
Manufactured	Lighting Standard	29.26	100%	30%	30	30
Manufactured	Microwave	0.93	100%	2%	148	148
Manufactured	Monitor	0.64	100%	70%	56	60
Manufactured	Plug Load Other	1.00	100%	0%	563	563
Manufactured	Printer	0.88	100%	70%	169	142
Manufactured	Refrigerator	1.06	100%	39%	443	446
Manufactured	Set Top Box	0.28	100%	51%	206	204
Manufactured	TV	1.45	100%	74%	195	187
Manufactured	Ventilation And Circulation	0.86	100%	5%	580	580
Manufactured	Water Heat GT 55 Gal	0.08	30%	5%	2,970	3,095
Manufactured	Water Heat LE 55 Gal	0.93	30%	5%	2,904	2,900
Multifamily	Computer	0.70	100%	60%	193	184
Multifamily	Cooking Oven	1.00	78%	5%	105	105
Multifamily	Cooking Range	1.00	74%	0%	53	53
Multifamily	Cool Central	0.45	100%	61%	602	349
Multifamily	Cool Room	0.20	100%	41%	362	313
Multifamily	DVD	0.57	100%	63%	22	21
Multifamily	Dehumidifier	0.05	100%	0%	882	853
Multifamily	Dryer	0.75	88%	2%	558	539
Multifamily	Freezer	0.39	100%	20%	437	416
Multifamily	Heat Central	0.48	0%	0%	14,536	8,452
Multifamily	Heat Room	0.52	83%	0%	13,838	8,099
Multifamily	Home Audio System	0.74	100%	34%	103	96
Multifamily	Lighting Interior Specialty	5.32	100%	30%	25	25
Multifamily	Lighting Standard	30.17	100%	30%	30	30
Multifamily	Microwave	0.96	100%	2%	148	148
Multifamily	Monitor	0.52	100%	70%	56	60

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average UEC (kWh) - Existing	Weighted Average UEC (kWh) - New
Multifamily	Plug Load Other	1.00	100%	0%	491	491
Multifamily	Printer	0.55	100%	70%	169	142
Multifamily	Refrigerator	1.05	100%	33%	447	450
Multifamily	Set Top Box	0.36	100%	51%	206	204
Multifamily	TV	1.30	100%	74%	195	187
Multifamily	Ventilation And Circulation	0.49	100%	5%	598	598
Multifamily	Water Heat GT 55 Gal	0.08	52%	5%	1,753	1,827
Multifamily	Water Heat LE 55 Gal	0.93	52%	5%	1,715	1,712
Single Family	Computer	1.07	100%	60%	193	184
Single Family	Cooking Oven	1.00	74%	5%	105	105
Single Family	Cooking Range	1.00	80%	0%	53	53
Single Family	Cool Central	0.76	100%	60%	825	439
Single Family	Cool Room	0.17	100%	41%	397	288
Single Family	Copier	0.12	100%	85%	144	152
Single Family	DVD	0.98	100%	63%	22	21
Single Family	Dehumidifier	0.00	100%	0%	882	853
Single Family	Dryer	1.02	95%	2%	892	861
Single Family	Freezer	0.77	100%	20%	437	416
Single Family	Heat Central	0.67	7%	0%	21,312	11,939
Single Family	Heat Pump	0.03	100%	10%	10,958	5,846
Single Family	Heat Room	0.18	48%	0%	19,869	11,281
Single Family	Home Audio System	0.79	100%	34%	103	96
Single Family	Lighting Interior Specialty	8.18	100%	30%	25	25
Single Family	Lighting Standard	46.37	100%	30%	30	30
Single Family	Microwave	0.94	100%	2%	148	148
Single Family	Monitor	0.81	100%	70%	56	60
Single Family	Plug Load Other	1.00	100%	0%	572	572
Single Family	Pool Pump	0.00	100%	3%	1,369	1,369
Single Family	Printer	0.98	100%	70%	169	142
Single Family	Refrigerator	1.13	100%	57%	430	432
Single Family	Set Top Box	0.46	100%	51%	206	204
Single Family	TV	1.65	100%	74%	195	187
Single Family	Ventilation And Circulation	0.68	100%	5%	920	920
Single Family	Water Heat GT 55 Gal	0.08	23%	5%	2,800	2,919
Single Family	Water Heat LE 55 Gal	0.93	23%	5%	2,736	2,734

Table C-1.8. California Commercial Saturations, Fuel Shares, Share Above Standard, and EUIs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/ sqft) - Existing	Weighted Average EUI (kWh/ sqft) - New
Grocery	Computers	1.00	100%	60%	0.05	0.05
Grocery	Cooking	0.56	22%	0%	2.17	2.17
Grocery	Cooling DX Evap	0.73	100%	36%	3.77	2.18
Grocery	Fax	1.00	100%	6%	0.02	0.02
Grocery	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Grocery	Freezers	1.00	100%	0%	0.01	0.01
Grocery	Heat Pump	0.05	100%	3%	8.80	4.06
Grocery	Lighting Exterior	1.00	100%	0%	1.05	1.05
Grocery	Lighting Interior Fluorescent	1.00	100%	7%	7.70	.
Grocery	Lighting Interior HID	1.00	100%	94%	1.11	.
Grocery	Lighting Interior Other	1.00	100%	0%	0.16	8.41
Grocery	Lighting Interior Screw Base	1.00	100%	72%	1.06	.
Grocery	Other Plug Load	1.00	100%	0%	0.94	0.94
Grocery	Photo Copiers	1.00	100%	83%	0.11	0.11
Grocery	Printers	1.00	100%	70%	0.02	0.02
Grocery	Refrigeration	0.72	100%	0%	22.21	22.21
Grocery	Refrigerators	1.00	100%	0%	0.06	0.06
Grocery	Space Heat	0.83	27%	0%	4.68	1.77
Grocery	Vending Machines	1.00	100%	27%	0.19	0.19
Grocery	Ventilation and Circulation	1.00	100%	0%	4.51	4.30
Grocery	Water Heat GT 55 Gal	0.08	60%	11%	0.35	0.35
Grocery	Water Heat LE 55 Gal	0.92	60%	11%	0.36	0.35
Health	Computers	1.00	100%	60%	0.35	0.33
Health	Cooking	0.26	5%	0%	0.44	0.44
Health	Cooling Chillers	0.13	100%	3%	1.58	0.87
Health	Cooling DX Evap	0.75	100%	36%	2.42	1.42
Health	Fax	1.00	100%	6%	0.01	0.00
Health	Flat Screen Monitors	1.00	100%	78%	0.07	0.08
Health	Freezers	1.00	100%	0%	0.01	0.01
Health	Heat Pump	0.04	100%	6%	7.86	5.06
Health	Lighting Exterior	1.00	100%	0%	0.58	0.58
Health	Lighting Interior Fluorescent	1.00	100%	62%	5.53	.
Health	Lighting Interior HID	1.00	100%	60%	0.12	.
Health	Lighting Interior Other	1.00	100%	0%	0.27	5.20
Health	Lighting Interior Screw Base	1.00	100%	100%	1.04	.
Health	Other Plug Load	1.00	100%	0%	2.81	2.81
Health	Photo Copiers	1.00	100%	83%	0.02	0.02
Health	Printers	1.00	100%	70%	0.08	0.07
Health	Refrigeration	0.30	100%	0%	0.65	0.65
Health	Refrigerators	1.00	100%	0%	0.11	0.11

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/ sqft) - Existing	Weighted Average EUI (kWh/ sqft) - New
Health	Servers	1.00	100%	4%	0.06	0.06
Health	Space Heat	0.91	21%	0%	9.06	6.25
Health	Vending Machines	1.00	100%	27%	0.05	0.05
Health	Ventilation and Circulation	1.00	100%	0%	6.71	5.71
Health	Water Heat GT 55 Gal	0.08	34%	11%	1.69	1.67
Health	Water Heat LE 55 Gal	0.87	34%	11%	1.73	1.67
Lodging	Computers	1.00	100%	60%	0.08	0.07
Lodging	Cooking	0.60	1%	0%	0.72	0.72
Lodging	Cooling Chillers	0.15	100%	3%	1.69	0.97
Lodging	Cooling DX Evap	0.29	100%	36%	1.90	1.22
Lodging	Cooling Room	0.22	100%	3%	2.35	1.55
Lodging	Fax	1.00	100%	6%	0.00	0.00
Lodging	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Lodging	Freezers	1.00	100%	0%	0.02	0.02
Lodging	Heat Pump	0.15	100%	7%	5.81	3.67
Lodging	Lighting Exterior	1.00	100%	0%	0.66	0.66
Lodging	Lighting Interior Fluorescent	1.00	100%	3%	1.16	.
Lodging	Lighting Interior HID	1.00	100%	99%	0.04	.
Lodging	Lighting Interior Other	1.00	100%	0%	0.04	2.55
Lodging	Lighting Interior Screw Base	1.00	100%	74%	3.14	.
Lodging	Other Plug Load	1.00	100%	0%	0.80	0.80
Lodging	Photo Copiers	1.00	100%	83%	0.01	0.01
Lodging	Printers	1.00	100%	70%	0.03	0.02
Lodging	Refrigeration	0.11	100%	0%	1.15	1.15
Lodging	Refrigerators	1.00	100%	0%	0.21	0.21
Lodging	Space Heat	0.78	43%	0%	6.06	4.04
Lodging	Vending Machines	1.00	100%	27%	0.09	0.09
Lodging	Ventilation and Circulation	1.00	100%	0%	2.59	2.53
Lodging	Water Heat GT 55 Gal	0.08	34%	11%	1.60	1.59
Lodging	Water Heat LE 55 Gal	0.87	34%	11%	1.64	1.59
Miscellaneous	Computers	1.00	100%	60%	0.15	0.15
Miscellaneous	Cooking	0.31	2%	0%	0.30	0.30
Miscellaneous	Cooling Chillers	0.01	100%	3%	2.45	1.35
Miscellaneous	Cooling DX Evap	0.38	100%	36%	2.75	1.70
Miscellaneous	Fax	1.00	100%	6%	0.02	0.02
Miscellaneous	Flat Screen Monitors	1.00	100%	78%	0.03	0.04
Miscellaneous	Freezers	1.00	100%	0%	0.01	0.01
Miscellaneous	Heat Pump	0.02	100%	4%	5.39	2.97
Miscellaneous	Lighting Exterior	1.00	100%	0%	1.23	1.23
Miscellaneous	Lighting Interior Fluorescent	1.00	100%	0%	2.62	.
Miscellaneous	Lighting Interior HID	1.00	100%	97%	0.92	.
Miscellaneous	Lighting Interior Other	1.00	100%	0%	0.13	3.19
Miscellaneous	Lighting Interior Screw Base	1.00	100%	51%	0.75	.

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/ sqft) - Existing	Weighted Average EUI (kWh/ sqft) - New
Miscellaneous	Other Plug Load	1.00	100%	0%	0.70	0.70
Miscellaneous	Photo Copiers	1.00	100%	83%	0.07	0.07
Miscellaneous	Printers	1.00	100%	70%	0.04	0.03
Miscellaneous	Refrigeration	0.11	100%	0%	0.87	0.87
Miscellaneous	Refrigerators	1.00	100%	0%	0.05	0.05
Miscellaneous	Servers	1.00	100%	4%	0.53	0.52
Miscellaneous	Space Heat	0.72	33%	0%	3.14	1.65
Miscellaneous	Vending Machines	1.00	100%	27%	0.08	0.08
Miscellaneous	Ventilation and Circulation	1.00	100%	0%	3.06	2.60
Miscellaneous	Water Heat GT 55 Gal	0.06	90%	11%	0.42	0.42
Miscellaneous	Water Heat LE 55 Gal	0.70	90%	11%	0.43	0.42
Restaurant	Computers	1.00	100%	60%	0.13	0.13
Restaurant	Cooking	0.81	27%	0%	10.44	10.44
Restaurant	Cooling DX Evap	0.70	100%	36%	4.37	2.44
Restaurant	Fax	1.00	100%	6%	0.02	0.02
Restaurant	Flat Screen Monitors	1.00	100%	78%	0.03	0.03
Restaurant	Freezers	1.00	100%	0%	0.01	0.01
Restaurant	Lighting Exterior	1.00	100%	0%	2.36	2.36
Restaurant	Lighting Interior Fluorescent	1.00	100%	0%	3.71	.
Restaurant	Lighting Interior HID	1.00	100%	100%	0.26	.
Restaurant	Lighting Interior Other	1.00	100%	0%	0.32	5.78
Restaurant	Lighting Interior Screw Base	1.00	100%	60%	4.55	.
Restaurant	Other Plug Load	1.00	100%	0%	1.18	1.18
Restaurant	Photo Copiers	1.00	100%	83%	0.10	0.11
Restaurant	Printers	1.00	100%	70%	0.04	0.03
Restaurant	Refrigeration	0.77	100%	0%	9.70	9.70
Restaurant	Refrigerators	1.00	100%	0%	0.05	0.05
Restaurant	Space Heat	0.93	50%	0%	3.93	2.05
Restaurant	Ventilation and Circulation	1.00	100%	0%	4.51	4.13
Restaurant	Water Heat GT 55 Gal	0.07	70%	11%	8.03	7.96
Restaurant	Water Heat LE 55 Gal	0.85	70%	11%	8.21	7.98
School	Computers	1.00	100%	60%	0.51	0.48
School	Cooking	0.60	28%	0%	0.36	0.36
School	Cooling Chillers	0.23	100%	3%	0.74	0.49
School	Cooling DX Evap	0.40	100%	36%	0.97	0.69
School	Fax	1.00	100%	6%	0.01	0.01
School	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
School	Freezers	1.00	100%	0%	0.00	0.00
School	Lighting Exterior	1.00	100%	0%	0.76	0.76
School	Lighting Interior Fluorescent	1.00	100%	0%	2.84	.
School	Lighting Interior HID	1.00	100%	85%	0.30	.
School	Lighting Interior Other	1.00	100%	0%	0.02	2.57
School	Lighting Interior Screw Base	1.00	100%	72%	0.14	.

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/ sqft) - Existing	Weighted Average EUI (kWh/ sqft) - New
School	Other Plug Load	1.00	100%	0%	0.05	0.05
School	Photo Copiers	1.00	100%	83%	0.06	0.07
School	Printers	1.00	100%	70%	0.09	0.07
School	Refrigeration	0.35	100%	0%	0.42	0.42
School	Refrigerators	1.00	100%	0%	0.04	0.04
School	Servers	1.00	100%	4%	0.03	0.03
School	Space Heat	0.97	13%	0%	12.50	7.45
School	Vending Machines	1.00	100%	27%	0.08	0.08
School	Ventilation and Circulation	1.00	100%	0%	2.74	2.06
School	Water Heat GT 55 Gal	0.07	41%	11%	1.70	1.68
School	Water Heat LE 55 Gal	0.83	41%	11%	1.74	1.68
Small Office	Computers	1.00	100%	60%	0.63	0.60
Small Office	Cooling DX Evap	0.69	100%	36%	2.62	1.63
Small Office	Fax	1.00	100%	6%	0.01	0.01
Small Office	Flat Screen Monitors	1.00	100%	78%	0.13	0.14
Small Office	Freezers	1.00	100%	0%	0.00	0.00
Small Office	Lighting Exterior	1.00	100%	0%	1.28	1.28
Small Office	Lighting Interior Fluorescent	1.00	100%	0%	3.16	.
Small Office	Lighting Interior HID	1.00	100%	91%	0.12	.
Small Office	Lighting Interior Other	1.00	100%	0%	0.04	2.56
Small Office	Lighting Interior Screw Base	1.00	100%	67%	0.47	.
Small Office	Other Plug Load	1.00	100%	0%	1.28	1.28
Small Office	Photo Copiers	1.00	100%	83%	0.03	0.03
Small Office	Printers	1.00	100%	70%	0.11	0.09
Small Office	Refrigerators	1.00	100%	0%	0.05	0.05
Small Office	Servers	1.00	100%	4%	0.10	0.10
Small Office	Space Heat	0.93	38%	0%	3.97	2.08
Small Office	Vending Machines	1.00	100%	27%	0.09	0.09
Small Office	Ventilation and Circulation	1.00	100%	0%	2.58	2.34
Small Office	Water Heat GT 55 Gal	0.07	96%	11%	0.49	0.49
Small Office	Water Heat LE 55 Gal	0.83	96%	11%	0.50	0.49
Small Retail	Computers	1.00	100%	60%	0.08	0.08
Small Retail	Cooling DX Evap	0.52	100%	33%	2.94	1.88
Small Retail	Fax	1.00	100%	6%	0.01	0.01
Small Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Small Retail	Freezers	1.00	100%	0%	0.00	0.00
Small Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Small Retail	Lighting Interior Fluorescent	1.00	100%	1%	4.66	.
Small Retail	Lighting Interior HID	1.00	100%	94%	0.83	.
Small Retail	Lighting Interior Other	1.00	100%	0%	0.24	4.67
Small Retail	Lighting Interior Screw Base	1.00	100%	67%	1.47	.
Small Retail	Other Plug Load	1.00	100%	0%	1.13	1.13
Small Retail	Photo Copiers	1.00	100%	83%	0.03	0.03

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/ sqft) - Existing	Weighted Average EUI (kWh/ sqft) - New
Small Retail	Printers	1.00	100%	70%	0.03	0.02
Small Retail	Refrigerators	1.00	100%	0%	0.02	0.02
Small Retail	Space Heat	0.84	20%	0%	2.32	1.21
Small Retail	Vending Machines	1.00	100%	27%	0.08	0.07
Small Retail	Ventilation and Circulation	1.00	100%	0%	3.54	2.86
Small Retail	Water Heat GT 55 Gal	0.05	94%	11%	0.35	0.34
Small Retail	Water Heat LE 55 Gal	0.56	94%	11%	0.36	0.34
Warehouse	Computers	1.00	100%	60%	0.10	0.10
Warehouse	Cooling Chillers	0.04	100%	3%	0.75	0.46
Warehouse	Cooling DX Evap	0.24	100%	36%	0.84	0.58
Warehouse	Fax	1.00	100%	6%	0.01	0.01
Warehouse	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Warehouse	Freezers	1.00	100%	0%	0.00	0.00
Warehouse	Heat Pump	0.04	100%	3%	2.74	2.01
Warehouse	Lighting Exterior	1.00	100%	0%	0.28	0.28
Warehouse	Lighting Interior Fluorescent	1.00	100%	1%	1.23	.
Warehouse	Lighting Interior HID	1.00	100%	72%	1.03	.
Warehouse	Lighting Interior Other	1.00	100%	0%	0.01	2.06
Warehouse	Lighting Interior Screw Base	1.00	100%	47%	0.55	.
Warehouse	Other Plug Load	1.00	100%	0%	0.23	0.23
Warehouse	Photo Copiers	1.00	100%	83%	0.04	0.04
Warehouse	Printers	1.00	100%	70%	0.02	0.02
Warehouse	Refrigerators	1.00	100%	0%	0.02	0.02
Warehouse	Space Heat	0.59	16%	0%	2.25	1.73
Warehouse	Vending Machines	1.00	100%	27%	0.03	0.03
Warehouse	Ventilation and Circulation	1.00	100%	0%	1.04	0.81
Warehouse	Water Heat GT 55 Gal	0.07	52%	11%	0.26	0.26
Warehouse	Water Heat LE 55 Gal	0.81	52%	11%	0.27	0.26

Table C-1.9. Idaho Commercial Saturations, Fuel Shares, Share Above Standard, and EUIs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Grocery	Computers	1.00	100%	60%	0.04	0.04
Grocery	Cooking	0.56	22%	0%	2.17	2.17
Grocery	Cooling DX Evap	0.73	100%	30%	3.40	2.01
Grocery	Fax	1.00	100%	6%	0.01	0.01
Grocery	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Grocery	Freezers	1.00	100%	0%	0.02	0.02
Grocery	Heat Pump	0.05	100%	3%	8.59	4.12
Grocery	Lighting Exterior	1.00	100%	0%	1.05	1.05
Grocery	Lighting Interior Fluorescent	1.00	100%	7%	7.70	.
Grocery	Lighting Interior HID	1.00	100%	94%	1.11	.
Grocery	Lighting Interior Other	1.00	100%	0%	0.16	8.41
Grocery	Lighting Interior Screw Base	1.00	100%	48%	1.18	.
Grocery	Other Plug Load	1.00	100%	0%	0.92	0.92
Grocery	Photo Copiers	1.00	100%	83%	0.05	0.05
Grocery	Printers	1.00	100%	70%	0.01	0.01
Grocery	Refrigeration	0.72	100%	0%	22.36	22.36
Grocery	Refrigerators	1.00	100%	0%	0.15	0.15
Grocery	Space Heat	0.83	27%	0%	5.96	2.22
Grocery	Vending Machines	1.00	100%	27%	0.05	0.05
Grocery	Ventilation and Circulation	1.00	100%	0%	4.35	4.27
Grocery	Water Heat GT 55 Gal	0.08	60%	11%	0.33	0.33
Grocery	Water Heat LE 55 Gal	0.92	60%	11%	0.34	0.33
Health	Computers	1.00	100%	60%	0.31	0.29
Health	Cooking	0.26	5%	0%	0.44	0.44
Health	Cooling Chillers	0.13	100%	3%	1.10	0.53
Health	Cooling DX Evap	0.75	100%	30%	1.51	0.80
Health	Fax	1.00	100%	6%	0.01	0.01
Health	Flat Screen Monitors	1.00	100%	78%	0.06	0.07
Health	Freezers	1.00	100%	0%	0.01	0.01
Health	Heat Pump	0.04	100%	6%	7.72	4.97
Health	Lighting Exterior	1.00	100%	0%	0.58	0.58
Health	Lighting Interior Fluorescent	1.00	100%	62%	5.20	.
Health	Lighting Interior HID	1.00	100%	60%	0.12	.
Health	Lighting Interior Other	1.00	100%	0%	0.27	4.72
Health	Lighting Interior Screw Base	1.00	100%	81%	1.53	.
Health	Other Plug Load	1.00	100%	0%	2.90	2.90
Health	Photo Copiers	1.00	100%	83%	0.03	0.03
Health	Printers	1.00	100%	70%	0.08	0.07
Health	Refrigeration	0.30	100%	0%	0.64	0.64
Health	Refrigerators	1.00	100%	0%	0.09	0.09

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Health	Servers	1.00	100%	4%	0.05	0.05
Health	Space Heat	0.91	21%	0%	9.26	6.62
Health	Vending Machines	1.00	100%	27%	0.07	0.07
Health	Ventilation and Circulation	1.00	100%	0%	6.42	5.50
Health	Water Heat GT 55 Gal	0.08	34%	11%	1.71	1.69
Health	Water Heat LE 55 Gal	0.87	34%	11%	1.75	1.69
Large Office	Computers	1.00	100%	60%	0.51	0.48
Large Office	Cooling Chillers	0.20	100%	3%	0.84	0.55
Large Office	Cooling DX Evap	0.16	100%	30%	1.78	1.18
Large Office	Fax	1.00	100%	6%	0.01	0.01
Large Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Large Office	Freezers	1.00	100%	0%	0.01	0.01
Large Office	Heat Pump	0.08	100%	28%	6.64	3.26
Large Office	Lighting Exterior	1.00	100%	0%	0.51	0.51
Large Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Large Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Large Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Large Office	Lighting Interior Screw Base	1.00	100%	62%	0.50	.
Large Office	Other Plug Load	1.00	100%	0%	0.47	0.47
Large Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Large Office	Printers	1.00	100%	70%	0.10	0.09
Large Office	Refrigerators	1.00	100%	0%	0.06	0.06
Large Office	Servers	1.00	100%	4%	0.08	0.08
Large Office	Space Heat	0.84	20%	0%	7.57	3.44
Large Office	Vending Machines	1.00	100%	27%	0.09	0.09
Large Office	Ventilation and Circulation	1.00	100%	0%	3.24	2.80
Large Office	Water Heat GT 55 Gal	0.07	30%	11%	0.48	0.51
Large Office	Water Heat LE 55 Gal	0.77	30%	11%	0.49	0.51
Large Retail	Computers	1.00	100%	60%	0.09	0.09
Large Retail	Cooling DX Evap	0.33	100%	30%	2.06	1.48
Large Retail	Fax	1.00	100%	6%	0.01	0.01
Large Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Large Retail	Freezers	1.00	100%	0%	0.00	0.00
Large Retail	Heat Pump	0.07	100%	3%	6.17	3.55
Large Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Large Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Large Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Large Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Large Retail	Lighting Interior Screw Base	1.00	100%	40%	1.78	.
Large Retail	Other Plug Load	1.00	100%	0%	0.52	0.52
Large Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Large Retail	Printers	1.00	100%	70%	0.03	0.02
Large Retail	Refrigerators	1.00	100%	0%	0.04	0.04

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Large Retail	Space Heat	0.55	14%	0%	5.53	2.82
Large Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Large Retail	Ventilation and Circulation	1.00	100%	0%	2.75	2.24
Large Retail	Water Heat GT 55 Gal	0.07	42%	11%	0.29	0.28
Large Retail	Water Heat LE 55 Gal	0.80	42%	11%	0.30	0.28
Lodging	Computers	1.00	100%	60%	0.20	0.19
Lodging	Cooking	0.60	1%	0%	0.72	0.72
Lodging	Cooling Chillers	0.15	100%	3%	1.87	0.98
Lodging	Cooling DX Evap	0.29	100%	30%	2.20	1.28
Lodging	Cooling Room	0.22	100%	3%	2.59	1.57
Lodging	Fax	1.00	100%	6%	0.00	0.00
Lodging	Flat Screen Monitors	1.00	100%	78%	0.04	0.05
Lodging	Freezers	1.00	100%	0%	0.01	0.01
Lodging	Heat Pump	0.15	100%	7%	9.08	5.54
Lodging	Lighting Exterior	1.00	100%	0%	0.66	0.66
Lodging	Lighting Interior Fluorescent	1.00	100%	3%	1.16	.
Lodging	Lighting Interior HID	1.00	100%	99%	0.04	.
Lodging	Lighting Interior Other	1.00	100%	0%	0.04	2.55
Lodging	Lighting Interior Screw Base	1.00	100%	51%	3.53	.
Lodging	Other Plug Load	1.00	100%	0%	0.52	0.52
Lodging	Photo Copiers	1.00	100%	83%	0.02	0.02
Lodging	Printers	1.00	100%	70%	0.02	0.01
Lodging	Refrigeration	0.11	100%	0%	1.17	1.17
Lodging	Refrigerators	1.00	100%	0%	0.10	0.10
Lodging	Space Heat	0.78	43%	0%	7.53	5.16
Lodging	Vending Machines	1.00	100%	27%	0.06	0.06
Lodging	Ventilation and Circulation	1.00	100%	0%	3.28	3.27
Lodging	Water Heat GT 55 Gal	0.08	34%	11%	1.77	1.75
Lodging	Water Heat LE 55 Gal	0.87	34%	11%	1.81	1.76
Miscellaneous	Computers	1.00	100%	60%	0.12	0.12
Miscellaneous	Cooking	0.31	1%	0%	0.30	0.30
Miscellaneous	Cooling Chillers	0.01	100%	3%	1.56	0.91
Miscellaneous	Cooling DX Evap	0.38	100%	32%	1.80	1.17
Miscellaneous	Fax	1.00	100%	6%	0.01	0.01
Miscellaneous	Flat Screen Monitors	1.00	100%	78%	0.03	0.03
Miscellaneous	Freezers	1.00	100%	0%	0.01	0.01
Miscellaneous	Heat Pump	0.02	100%	4%	6.61	3.39
Miscellaneous	Lighting Exterior	1.00	100%	0%	1.23	1.23
Miscellaneous	Lighting Interior Fluorescent	1.00	100%	0%	2.88	.
Miscellaneous	Lighting Interior HID	1.00	100%	97%	0.98	.
Miscellaneous	Lighting Interior Other	1.00	100%	0%	0.13	3.76
Miscellaneous	Lighting Interior Screw Base	1.00	100%	56%	0.79	.
Miscellaneous	Other Plug Load	1.00	100%	0%	1.25	1.25

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Miscellaneous	Photo Copiers	1.00	100%	83%	0.07	0.07
Miscellaneous	Printers	1.00	100%	70%	0.03	0.03
Miscellaneous	Refrigeration	0.11	100%	0%	0.81	0.81
Miscellaneous	Refrigerators	1.00	100%	0%	0.05	0.05
Miscellaneous	Servers	1.00	100%	4%	0.01	0.01
Miscellaneous	Space Heat	0.72	10%	0%	6.55	3.13
Miscellaneous	Vending Machines	1.00	100%	27%	0.12	0.12
Miscellaneous	Ventilation and Circulation	1.00	100%	0%	2.51	2.09
Miscellaneous	Water Heat GT 55 Gal	0.06	58%	11%	0.39	0.39
Miscellaneous	Water Heat LE 55 Gal	0.70	58%	11%	0.40	0.39
Restaurant	Computers	1.00	100%	60%	0.05	0.05
Restaurant	Cooking	0.81	25%	0%	10.44	10.44
Restaurant	Cooling DX Evap	0.70	100%	43%	3.31	1.91
Restaurant	Fax	1.00	100%	6%	0.06	0.06
Restaurant	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Restaurant	Freezers	1.00	100%	0%	0.03	0.03
Restaurant	Lighting Exterior	1.00	100%	0%	2.36	2.36
Restaurant	Lighting Interior Fluorescent	1.00	100%	0%	4.54	.
Restaurant	Lighting Interior HID	1.00	100%	100%	0.31	.
Restaurant	Lighting Interior Other	1.00	100%	0%	0.32	7.70
Restaurant	Lighting Interior Screw Base	1.00	100%	90%	3.92	.
Restaurant	Other Plug Load	1.00	100%	0%	0.82	0.82
Restaurant	Photo Copiers	1.00	100%	83%	0.28	0.28
Restaurant	Printers	1.00	100%	70%	0.01	0.01
Restaurant	Refrigeration	0.77	100%	0%	9.00	9.00
Restaurant	Refrigerators	1.00	100%	0%	0.31	0.31
Restaurant	Space Heat	0.93	10%	0%	4.39	1.73
Restaurant	Ventilation and Circulation	1.00	100%	0%	4.16	3.92
Restaurant	Water Heat GT 55 Gal	0.07	29%	11%	8.32	8.25
Restaurant	Water Heat LE 55 Gal	0.85	29%	11%	8.51	8.27
School	Computers	1.00	100%	60%	0.46	0.44
School	Cooking	0.60	28%	0%	0.36	0.36
School	Cooling Chillers	0.23	100%	3%	0.29	0.21
School	Cooling DX Evap	0.40	100%	30%	0.40	0.30
School	Fax	1.00	100%	6%	0.01	0.01
School	Flat Screen Monitors	1.00	100%	78%	0.10	0.11
School	Freezers	1.00	100%	0%	0.00	0.00
School	Lighting Exterior	1.00	100%	0%	0.76	0.76
School	Lighting Interior Fluorescent	1.00	100%	0%	3.08	.
School	Lighting Interior HID	1.00	100%	85%	0.32	.
School	Lighting Interior Other	1.00	100%	0%	0.02	3.08
School	Lighting Interior Screw Base	1.00	100%	48%	0.16	.
School	Other Plug Load	1.00	100%	0%	0.12	0.12

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
School	Photo Copiers	1.00	100%	83%	0.04	0.04
School	Printers	1.00	100%	70%	0.04	0.04
School	Refrigeration	0.35	100%	0%	0.42	0.42
School	Refrigerators	1.00	100%	0%	0.03	0.03
School	Servers	1.00	100%	4%	0.03	0.03
School	Space Heat	0.97	13%	0%	17.01	10.17
School	Vending Machines	1.00	100%	27%	0.09	0.09
School	Ventilation and Circulation	1.00	100%	0%	2.09	1.72
School	Water Heat GT 55 Gal	0.07	41%	11%	1.58	1.57
School	Water Heat LE 55 Gal	0.83	41%	11%	1.62	1.57
Small Office	Computers	1.00	100%	60%	0.51	0.48
Small Office	Cooling DX Evap	0.69	100%	23%	1.79	1.13
Small Office	Fax	1.00	100%	6%	0.01	0.01
Small Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Small Office	Freezers	1.00	100%	0%	0.01	0.01
Small Office	Lighting Exterior	1.00	100%	0%	1.28	1.28
Small Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Small Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Small Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Small Office	Lighting Interior Screw Base	1.00	100%	73%	0.46	.
Small Office	Other Plug Load	1.00	100%	0%	1.53	1.53
Small Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Small Office	Printers	1.00	100%	70%	0.10	0.09
Small Office	Refrigerators	1.00	100%	0%	0.06	0.06
Small Office	Servers	1.00	100%	4%	0.08	0.08
Small Office	Space Heat	0.93	28%	0%	7.57	3.44
Small Office	Vending Machines	1.00	100%	27%	0.09	0.09
Small Office	Ventilation and Circulation	1.00	100%	0%	2.26	1.95
Small Office	Water Heat GT 55 Gal	0.07	44%	11%	0.48	0.51
Small Office	Water Heat LE 55 Gal	0.83	44%	11%	0.49	0.51
Small Retail	Computers	1.00	100%	60%	0.09	0.09
Small Retail	Cooling DX Evap	0.52	100%	30%	1.97	1.35
Small Retail	Fax	1.00	100%	6%	0.01	0.01
Small Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Small Retail	Freezers	1.00	100%	0%	0.00	0.00
Small Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Small Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Small Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Small Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Small Retail	Lighting Interior Screw Base	1.00	100%	98%	1.05	.
Small Retail	Other Plug Load	1.00	100%	0%	0.86	0.86
Small Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Small Retail	Printers	1.00	100%	70%	0.03	0.02

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Small Retail	Refrigerators	1.00	100%	0%	0.04	0.04
Small Retail	Space Heat	0.84	24%	0%	5.53	2.82
Small Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Small Retail	Ventilation and Circulation	1.00	100%	0%	2.75	2.24
Small Retail	Water Heat GT 55 Gal	0.05	43%	11%	0.29	0.28
Small Retail	Water Heat LE 55 Gal	0.56	43%	11%	0.30	0.28
Warehouse	Computers	1.00	100%	60%	0.05	0.05
Warehouse	Cooling Chillers	0.04	100%	3%	0.44	0.26
Warehouse	Cooling DX Evap	0.24	100%	30%	0.51	0.35
Warehouse	Fax	1.00	100%	6%	0.01	0.01
Warehouse	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Warehouse	Freezers	1.00	100%	0%	0.00	0.00
Warehouse	Heat Pump	0.04	100%	3%	2.62	2.14
Warehouse	Lighting Exterior	1.00	100%	0%	0.28	0.28
Warehouse	Lighting Interior Fluorescent	1.00	100%	1%	1.49	.
Warehouse	Lighting Interior HID	1.00	100%	72%	1.18	.
Warehouse	Lighting Interior Other	1.00	100%	0%	0.01	2.75
Warehouse	Lighting Interior Screw Base	1.00	100%	51%	0.63	.
Warehouse	Other Plug Load	1.00	100%	0%	0.35	0.35
Warehouse	Photo Copiers	1.00	100%	83%	0.03	0.03
Warehouse	Printers	1.00	100%	70%	0.01	0.01
Warehouse	Refrigerators	1.00	100%	0%	0.02	0.02
Warehouse	Space Heat	0.59	16%	0%	4.07	3.21
Warehouse	Vending Machines	1.00	100%	27%	0.06	0.06
Warehouse	Ventilation and Circulation	1.00	100%	0%	0.96	0.70
Warehouse	Water Heat GT 55 Gal	0.07	52%	11%	0.24	0.24
Warehouse	Water Heat LE 55 Gal	0.81	52%	11%	0.25	0.24

Table C-1.10. Utah Commercial Saturations, Fuel Shares, Share Above Standard, and EUIs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Grocery	Computers	1.00	100%	60%	0.04	0.04
Grocery	Cooking	0.56	21%	0%	2.17	2.17
Grocery	Cooling DX Evap	0.73	100%	29%	4.36	2.81
Grocery	Fax	1.00	100%	6%	0.01	0.01
Grocery	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Grocery	Freezers	1.00	100%	0%	0.02	0.02
Grocery	Heat Pump	0.05	100%	3%	7.86	4.37
Grocery	Lighting Exterior	1.00	100%	0%	1.05	1.05
Grocery	Lighting Interior Fluorescent	1.00	100%	7%	7.70	.
Grocery	Lighting Interior HID	1.00	100%	94%	1.11	.
Grocery	Lighting Interior Other	1.00	100%	0%	0.16	8.41
Grocery	Lighting Interior Screw Base	1.00	100%	67%	1.11	.
Grocery	Other Plug Load	1.00	100%	0%	0.76	0.76
Grocery	Photo Copiers	1.00	100%	83%	0.05	0.05
Grocery	Printers	1.00	100%	70%	0.01	0.01
Grocery	Refrigeration	0.72	100%	0%	22.36	22.36
Grocery	Refrigerators	1.00	100%	0%	0.15	0.15
Grocery	Space Heat	0.83	24%	0%	4.05	1.50
Grocery	Vending Machines	1.00	100%	27%	0.05	0.05
Grocery	Ventilation and Circulation	1.00	100%	0%	4.01	3.88
Grocery	Water Heat GT 55 Gal	0.08	27%	11%	0.28	0.27
Grocery	Water Heat LE 55 Gal	0.92	27%	11%	0.29	0.27
Health	Computers	1.00	100%	60%	0.31	0.29
Health	Cooking	0.26	5%	0%	0.44	0.44
Health	Cooling Chillers	0.13	100%	3%	1.74	0.89
Health	Cooling DX Evap	0.75	100%	3%	2.56	1.43
Health	Fax	1.00	100%	6%	0.01	0.01
Health	Flat Screen Monitors	1.00	100%	78%	0.06	0.07
Health	Freezers	1.00	100%	0%	0.01	0.01
Health	Heat Pump	0.04	100%	6%	5.79	3.73
Health	Lighting Exterior	1.00	100%	0%	0.58	0.58
Health	Lighting Interior Fluorescent	1.00	100%	62%	5.20	.
Health	Lighting Interior HID	1.00	100%	60%	0.12	.
Health	Lighting Interior Other	1.00	100%	0%	0.27	4.72
Health	Lighting Interior Screw Base	1.00	100%	56%	1.85	.
Health	Other Plug Load	1.00	100%	0%	2.73	2.73
Health	Photo Copiers	1.00	100%	83%	0.03	0.03
Health	Printers	1.00	100%	70%	0.08	0.07
Health	Refrigeration	0.30	100%	0%	0.64	0.64
Health	Refrigerators	1.00	100%	0%	0.09	0.09

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Health	Servers	1.00	100%	4%	0.05	0.05
Health	Space Heat	0.91	20%	0%	5.43	4.15
Health	Vending Machines	1.00	100%	27%	0.07	0.07
Health	Ventilation and Circulation	1.00	100%	0%	6.14	5.26
Health	Water Heat GT 55 Gal	0.08	11%	11%	1.35	1.34
Health	Water Heat LE 55 Gal	0.87	11%	11%	1.38	1.34
Large Office	Computers	1.00	100%	60%	0.51	0.48
Large Office	Cooling Chillers	0.20	100%	3%	1.95	1.17
Large Office	Cooling DX Evap	0.16	100%	22%	2.98	1.94
Large Office	Fax	1.00	100%	6%	0.01	0.01
Large Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Large Office	Freezers	1.00	100%	0%	0.01	0.01
Large Office	Heat Pump	0.08	100%	28%	5.31	2.70
Large Office	Lighting Exterior	1.00	100%	0%	0.51	0.51
Large Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Large Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Large Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Large Office	Lighting Interior Screw Base	1.00	100%	90%	0.36	.
Large Office	Other Plug Load	1.00	100%	0%	0.47	0.47
Large Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Large Office	Printers	1.00	100%	70%	0.10	0.09
Large Office	Refrigerators	1.00	100%	0%	0.06	0.06
Large Office	Servers	1.00	100%	4%	0.08	0.08
Large Office	Space Heat	0.84	20%	0%	2.63	0.82
Large Office	Vending Machines	1.00	100%	27%	0.09	0.09
Large Office	Ventilation and Circulation	1.00	100%	0%	3.24	2.90
Large Office	Water Heat GT 55 Gal	0.07	30%	11%	0.41	0.44
Large Office	Water Heat LE 55 Gal	0.77	30%	11%	0.42	0.44
Large Retail	Computers	1.00	100%	60%	0.09	0.09
Large Retail	Cooling DX Evap	0.33	100%	22%	3.11	2.24
Large Retail	Fax	1.00	100%	6%	0.01	0.01
Large Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Large Retail	Freezers	1.00	100%	0%	0.00	0.00
Large Retail	Heat Pump	0.07	100%	3%	6.45	3.79
Large Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Large Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Large Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Large Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Large Retail	Lighting Interior Screw Base	1.00	100%	40%	1.78	.
Large Retail	Other Plug Load	1.00	100%	0%	0.52	0.52
Large Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Large Retail	Printers	1.00	100%	70%	0.03	0.02
Large Retail	Refrigerators	1.00	100%	0%	0.04	0.04

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Large Retail	Space Heat	0.55	14%	0%	3.21	1.46
Large Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Large Retail	Ventilation and Circulation	1.00	100%	0%	2.90	2.29
Large Retail	Water Heat GT 55 Gal	0.07	42%	11%	0.26	0.26
Large Retail	Water Heat LE 55 Gal	0.80	42%	11%	0.27	0.26
Lodging	Computers	1.00	100%	60%	0.20	0.19
Lodging	Cooking	0.60	3%	0%	0.72	0.72
Lodging	Cooling Chillers	0.15	100%	3%	1.99	1.10
Lodging	Cooling DX Evap	0.29	100%	22%	2.20	1.35
Lodging	Cooling Room	0.22	100%	3%	2.46	1.57
Lodging	Fax	1.00	100%	6%	0.00	0.00
Lodging	Flat Screen Monitors	1.00	100%	78%	0.04	0.05
Lodging	Freezers	1.00	100%	0%	0.01	0.01
Lodging	Heat Pump	0.15	100%	7%	4.89	2.87
Lodging	Lighting Exterior	1.00	100%	0%	0.66	0.66
Lodging	Lighting Interior Fluorescent	1.00	100%	3%	1.16	.
Lodging	Lighting Interior HID	1.00	100%	99%	0.04	.
Lodging	Lighting Interior Other	1.00	100%	0%	0.04	2.55
Lodging	Lighting Interior Screw Base	1.00	100%	73%	3.16	.
Lodging	Other Plug Load	1.00	100%	0%	0.41	0.41
Lodging	Photo Copiers	1.00	100%	83%	0.02	0.02
Lodging	Printers	1.00	100%	70%	0.02	0.01
Lodging	Refrigeration	0.11	100%	0%	1.81	1.81
Lodging	Refrigerators	1.00	100%	0%	0.10	0.10
Lodging	Space Heat	0.78	38%	0%	3.84	2.22
Lodging	Vending Machines	1.00	100%	27%	0.06	0.06
Lodging	Ventilation and Circulation	1.00	100%	0%	2.57	2.55
Lodging	Water Heat GT 55 Gal	0.08	17%	11%	1.63	1.62
Lodging	Water Heat LE 55 Gal	0.87	17%	11%	1.67	1.62
Miscellaneous	Computers	1.00	100%	60%	0.12	0.12
Miscellaneous	Cooking	0.31	1%	0%	0.30	0.30
Miscellaneous	Cooling Chillers	0.01	100%	3%	2.34	1.35
Miscellaneous	Cooling DX Evap	0.38	100%	26%	2.83	1.81
Miscellaneous	Fax	1.00	100%	6%	0.01	0.01
Miscellaneous	Flat Screen Monitors	1.00	100%	78%	0.03	0.03
Miscellaneous	Freezers	1.00	100%	0%	0.01	0.01
Miscellaneous	Heat Pump	0.02	100%	4%	5.83	2.96
Miscellaneous	Lighting Exterior	1.00	100%	0%	1.23	1.23
Miscellaneous	Lighting Interior Fluorescent	1.00	100%	0%	2.88	.
Miscellaneous	Lighting Interior HID	1.00	100%	97%	0.98	.
Miscellaneous	Lighting Interior Other	1.00	100%	0%	0.13	3.76
Miscellaneous	Lighting Interior Screw Base	1.00	100%	54%	0.79	.
Miscellaneous	Other Plug Load	1.00	100%	0%	0.79	0.79

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Miscellaneous	Photo Copiers	1.00	100%	83%	0.07	0.07
Miscellaneous	Printers	1.00	100%	70%	0.03	0.03
Miscellaneous	Refrigeration	0.11	100%	0%	0.81	0.81
Miscellaneous	Refrigerators	1.00	100%	0%	0.05	0.05
Miscellaneous	Servers	1.00	100%	4%	0.01	0.01
Miscellaneous	Space Heat	0.72	23%	0%	2.92	1.14
Miscellaneous	Vending Machines	1.00	100%	27%	0.12	0.12
Miscellaneous	Ventilation and Circulation	1.00	100%	0%	2.56	2.14
Miscellaneous	Water Heat GT 55 Gal	0.06	26%	11%	0.34	0.35
Miscellaneous	Water Heat LE 55 Gal	0.70	26%	11%	0.35	0.35
Restaurant	Computers	1.00	100%	60%	0.05	0.05
Restaurant	Cooking	0.81	6%	0%	10.44	10.44
Restaurant	Cooling DX Evap	0.70	100%	19%	5.42	3.10
Restaurant	Fax	1.00	100%	6%	0.06	0.06
Restaurant	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Restaurant	Freezers	1.00	100%	0%	0.03	0.03
Restaurant	Lighting Exterior	1.00	100%	0%	2.36	2.36
Restaurant	Lighting Interior Fluorescent	1.00	100%	0%	4.54	.
Restaurant	Lighting Interior HID	1.00	100%	100%	0.31	.
Restaurant	Lighting Interior Other	1.00	100%	0%	0.32	7.70
Restaurant	Lighting Interior Screw Base	1.00	100%	67%	5.18	.
Restaurant	Other Plug Load	1.00	100%	0%	0.80	0.80
Restaurant	Photo Copiers	1.00	100%	83%	0.28	0.28
Restaurant	Printers	1.00	100%	70%	0.01	0.01
Restaurant	Refrigeration	0.77	100%	0%	9.00	9.00
Restaurant	Refrigerators	1.00	100%	0%	0.31	0.31
Restaurant	Space Heat	0.93	29%	0%	3.74	1.75
Restaurant	Ventilation and Circulation	1.00	100%	0%	4.17	4.13
Restaurant	Water Heat GT 55 Gal	0.07	17%	11%	8.10	8.03
Restaurant	Water Heat LE 55 Gal	0.85	17%	11%	8.29	8.05
School	Computers	1.00	100%	60%	0.46	0.44
School	Cooking	0.60	23%	0%	0.36	0.36
School	Cooling Chillers	0.23	100%	3%	0.58	0.40
School	Cooling DX Evap	0.40	100%	22%	0.74	0.53
School	Fax	1.00	100%	6%	0.01	0.01
School	Flat Screen Monitors	1.00	100%	78%	0.10	0.11
School	Freezers	1.00	100%	0%	0.00	0.00
School	Lighting Exterior	1.00	100%	0%	0.76	0.76
School	Lighting Interior Fluorescent	1.00	100%	0%	3.08	.
School	Lighting Interior HID	1.00	100%	85%	0.32	.
School	Lighting Interior Other	1.00	100%	0%	0.02	3.08
School	Lighting Interior Screw Base	1.00	100%	71%	0.15	.
School	Other Plug Load	1.00	100%	0%	0.12	0.12

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
School	Photo Copiers	1.00	100%	83%	0.04	0.04
School	Printers	1.00	100%	70%	0.04	0.04
School	Refrigeration	0.35	100%	0%	0.42	0.42
School	Refrigerators	1.00	100%	0%	0.03	0.03
School	Servers	1.00	100%	4%	0.03	0.03
School	Space Heat	0.97	0%	0%	10.87	6.37
School	Vending Machines	1.00	100%	27%	0.09	0.09
School	Ventilation and Circulation	1.00	100%	0%	1.90	1.51
School	Water Heat GT 55 Gal	0.07	18%	11%	1.41	1.40
School	Water Heat LE 55 Gal	0.83	18%	11%	1.44	1.40
Small Office	Computers	1.00	100%	60%	0.51	0.48
Small Office	Cooling DX Evap	0.69	100%	4%	3.21	1.96
Small Office	Fax	1.00	100%	6%	0.01	0.01
Small Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Small Office	Freezers	1.00	100%	0%	0.01	0.01
Small Office	Lighting Exterior	1.00	100%	0%	1.28	1.28
Small Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Small Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Small Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Small Office	Lighting Interior Screw Base	1.00	100%	69%	0.47	.
Small Office	Other Plug Load	1.00	100%	0%	2.31	2.31
Small Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Small Office	Printers	1.00	100%	70%	0.10	0.09
Small Office	Refrigerators	1.00	100%	0%	0.06	0.06
Small Office	Servers	1.00	100%	4%	0.08	0.08
Small Office	Space Heat	0.93	26%	0%	2.63	0.82
Small Office	Vending Machines	1.00	100%	27%	0.09	0.09
Small Office	Ventilation and Circulation	1.00	100%	0%	2.21	1.98
Small Office	Water Heat GT 55 Gal	0.07	19%	11%	0.41	0.44
Small Office	Water Heat LE 55 Gal	0.83	19%	11%	0.42	0.44
Small Retail	Computers	1.00	100%	60%	0.09	0.09
Small Retail	Cooling DX Evap	0.52	100%	55%	2.30	1.60
Small Retail	Fax	1.00	100%	6%	0.01	0.01
Small Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Small Retail	Freezers	1.00	100%	0%	0.00	0.00
Small Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Small Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Small Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Small Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Small Retail	Lighting Interior Screw Base	1.00	100%	57%	1.78	.
Small Retail	Other Plug Load	1.00	100%	0%	1.06	1.06
Small Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Small Retail	Printers	1.00	100%	70%	0.03	0.02

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Small Retail	Refrigerators	1.00	100%	0%	0.04	0.04
Small Retail	Space Heat	0.84	9%	0%	3.21	1.46
Small Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Small Retail	Ventilation and Circulation	1.00	100%	0%	2.90	2.29
Small Retail	Water Heat GT 55 Gal	0.05	41%	11%	0.26	0.26
Small Retail	Water Heat LE 55 Gal	0.56	41%	11%	0.27	0.26
Warehouse	Computers	1.00	100%	60%	0.05	0.05
Warehouse	Cooling Chillers	0.04	100%	3%	0.69	0.43
Warehouse	Cooling DX Evap	0.24	100%	22%	0.86	0.59
Warehouse	Fax	1.00	100%	6%	0.01	0.01
Warehouse	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Warehouse	Freezers	1.00	100%	0%	0.00	0.00
Warehouse	Heat Pump	0.04	100%	3%	2.21	1.72
Warehouse	Lighting Exterior	1.00	100%	0%	0.28	0.28
Warehouse	Lighting Interior Fluorescent	1.00	100%	1%	1.49	.
Warehouse	Lighting Interior HID	1.00	100%	72%	1.18	.
Warehouse	Lighting Interior Other	1.00	100%	0%	0.01	2.75
Warehouse	Lighting Interior Screw Base	1.00	100%	65%	0.60	.
Warehouse	Other Plug Load	1.00	100%	0%	0.35	0.35
Warehouse	Photo Copiers	1.00	100%	83%	0.03	0.03
Warehouse	Printers	1.00	100%	70%	0.01	0.01
Warehouse	Refrigerators	1.00	100%	0%	0.02	0.02
Warehouse	Space Heat	0.59	16%	0%	2.18	1.74
Warehouse	Vending Machines	1.00	100%	27%	0.06	0.06
Warehouse	Ventilation and Circulation	1.00	100%	0%	0.84	0.66
Warehouse	Water Heat GT 55 Gal	0.07	52%	11%	0.21	0.21
Warehouse	Water Heat LE 55 Gal	0.81	52%	11%	0.21	0.21

Table C-1.11. Washington Commercial Saturations, Fuel Shares, Share Above Standard, and EUIs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Grocery	Computers	1.00	100%	60%	0.05	0.05
Grocery	Cooking	0.59	22%	0%	2.17	2.17
Grocery	Cooling DX Evap	0.56	100%	11%	4.01	2.35
Grocery	Fax	1.00	100%	6%	0.02	0.02
Grocery	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Grocery	Freezers	1.00	100%	100%	0.00	0.00
Grocery	Heat Pump	0.07	100%	3%	7.11	3.61
Grocery	Lighting Exterior	1.00	100%	0%	1.05	1.05
Grocery	Lighting Interior Fluorescent	1.00	100%	7%	7.29	.
Grocery	Lighting Interior HID	1.00	100%	94%	1.07	.
Grocery	Lighting Interior Other	1.00	100%	0%	0.16	7.46
Grocery	Lighting Interior Screw Base	1.00	100%	100%	0.62	.
Grocery	Other Plug Load	1.00	100%	0%	0.94	0.94
Grocery	Photo Copiers	1.00	100%	83%	0.11	0.11
Grocery	Printers	1.00	100%	70%	0.02	0.02
Grocery	Refrigeration	0.72	100%	0%	22.21	22.21
Grocery	Refrigerators	1.00	100%	100%	0.05	0.05
Grocery	Space Heat	0.82	27%	0%	4.53	2.72
Grocery	Vending Machines	1.00	100%	27%	0.19	0.19
Grocery	Ventilation and Circulation	1.00	100%	0%	3.99	3.89
Grocery	Water Heat GT 55 Gal	0.08	60%	100%	0.13	0.13
Grocery	Water Heat LE 55 Gal	0.90	60%	100%	0.29	0.29
Health	Computers	1.00	100%	60%	0.35	0.33
Health	Cooking	0.29	12%	0%	0.44	0.44
Health	Cooling Chillers	0.06	100%	3%	1.56	0.70
Health	Cooling DX Evap	0.76	100%	11%	2.15	1.05
Health	Fax	1.00	100%	6%	0.01	0.00
Health	Flat Screen Monitors	1.00	100%	78%	0.07	0.08
Health	Freezers	1.00	100%	100%	0.01	0.01
Health	Heat Pump	0.06	100%	6%	5.38	2.96
Health	Lighting Exterior	1.00	100%	0%	0.58	0.58
Health	Lighting Interior Fluorescent	1.00	100%	62%	5.20	.
Health	Lighting Interior HID	1.00	100%	60%	0.12	.
Health	Lighting Interior Other	1.00	100%	0%	0.27	4.72
Health	Lighting Interior Screw Base	1.00	100%	60%	1.82	.
Health	Other Plug Load	1.00	100%	0%	3.49	3.49
Health	Photo Copiers	1.00	100%	83%	0.02	0.02
Health	Printers	1.00	100%	70%	0.08	0.07
Health	Refrigeration	0.35	100%	0%	0.65	0.65
Health	Refrigerators	1.00	100%	100%	0.09	0.09

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Health	Servers	1.00	100%	4%	0.06	0.06
Health	Space Heat	0.94	19%	0%	5.43	3.39
Health	Vending Machines	1.00	100%	27%	0.05	0.05
Health	Ventilation and Circulation	1.00	100%	0%	6.01	5.03
Health	Water Heat GT 55 Gal	0.07	50%	100%	0.65	0.65
Health	Water Heat LE 55 Gal	0.76	50%	100%	1.39	1.39
Large Office	Computers	1.00	100%	60%	0.63	0.60
Large Office	Cooling Chillers	0.20	100%	3%	1.35	0.83
Large Office	Cooling DX Evap	0.16	100%	11%	2.22	1.48
Large Office	Fax	1.00	100%	6%	0.01	0.01
Large Office	Flat Screen Monitors	1.00	100%	78%	0.13	0.14
Large Office	Freezers	1.00	100%	100%	0.00	0.00
Large Office	Heat Pump	0.08	100%	28%	4.84	2.50
Large Office	Lighting Exterior	1.00	100%	0%	0.51	0.51
Large Office	Lighting Interior Fluorescent	1.00	100%	0%	3.22	.
Large Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Large Office	Lighting Interior Other	1.00	100%	0%	0.04	2.74
Large Office	Lighting Interior Screw Base	1.00	100%	32%	0.48	.
Large Office	Other Plug Load	1.00	100%	0%	0.31	0.31
Large Office	Photo Copiers	1.00	100%	83%	0.03	0.03
Large Office	Printers	1.00	100%	70%	0.11	0.09
Large Office	Refrigerators	1.00	100%	100%	0.04	0.04
Large Office	Servers	1.00	100%	4%	0.10	0.10
Large Office	Space Heat	0.84	20%	0%	5.12	2.45
Large Office	Vending Machines	1.00	100%	27%	0.09	0.09
Large Office	Ventilation and Circulation	1.00	100%	0%	3.24	2.84
Large Office	Water Heat GT 55 Gal	0.07	30%	100%	0.21	0.21
Large Office	Water Heat LE 55 Gal	0.77	30%	100%	0.45	0.45
Large Retail	Computers	1.00	100%	60%	0.08	0.08
Large Retail	Cooling DX Evap	0.33	100%	11%	2.71	1.91
Large Retail	Fax	1.00	100%	6%	0.01	0.01
Large Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Large Retail	Freezers	1.00	100%	100%	0.00	0.00
Large Retail	Heat Pump	0.07	100%	3%	4.86	3.05
Large Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Large Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.37	.
Large Retail	Lighting Interior HID	1.00	100%	94%	0.91	.
Large Retail	Lighting Interior Other	1.00	100%	0%	0.24	6.22
Large Retail	Lighting Interior Screw Base	1.00	100%	40%	1.68	.
Large Retail	Other Plug Load	1.00	100%	0%	0.62	0.62
Large Retail	Photo Copiers	1.00	100%	83%	0.03	0.03
Large Retail	Printers	1.00	100%	70%	0.03	0.02
Large Retail	Refrigerators	1.00	100%	100%	0.01	0.01

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Large Retail	Space Heat	0.55	14%	0%	3.59	2.02
Large Retail	Vending Machines	1.00	100%	27%	0.08	0.07
Large Retail	Ventilation and Circulation	1.00	100%	0%	2.95	2.43
Large Retail	Water Heat GT 55 Gal	0.07	42%	100%	0.13	0.13
Large Retail	Water Heat LE 55 Gal	0.80	42%	100%	0.29	0.28
Lodging	Computers	1.00	100%	60%	0.08	0.07
Lodging	Cooking	0.62	1%	0%	0.72	0.72
Lodging	Cooling Chillers	0.05	100%	3%	1.87	1.05
Lodging	Cooling DX Evap	0.21	100%	11%	2.18	1.36
Lodging	Cooling Room	0.20	100%	3%	2.26	1.48
Lodging	Fax	1.00	100%	6%	0.00	0.00
Lodging	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Lodging	Freezers	1.00	100%	100%	0.02	0.02
Lodging	Heat Pump	0.13	100%	7%	5.88	3.30
Lodging	Lighting Exterior	1.00	100%	0%	0.66	0.66
Lodging	Lighting Interior Fluorescent	1.00	100%	3%	1.16	.
Lodging	Lighting Interior HID	1.00	100%	99%	0.04	.
Lodging	Lighting Interior Other	1.00	100%	0%	0.04	2.55
Lodging	Lighting Interior Screw Base	1.00	100%	65%	3.37	.
Lodging	Other Plug Load	1.00	100%	0%	0.80	0.80
Lodging	Photo Copiers	1.00	100%	83%	0.01	0.01
Lodging	Printers	1.00	100%	70%	0.03	0.02
Lodging	Refrigeration	0.11	100%	0%	1.15	1.15
Lodging	Refrigerators	1.00	100%	100%	0.17	0.17
Lodging	Space Heat	0.84	43%	0%	6.22	3.54
Lodging	Vending Machines	1.00	100%	27%	0.09	0.09
Lodging	Ventilation and Circulation	1.00	100%	0%	2.51	2.47
Lodging	Water Heat GT 55 Gal	0.08	34%	100%	0.78	0.78
Lodging	Water Heat LE 55 Gal	0.89	34%	100%	1.67	1.67
Miscellaneous	Computers	1.00	100%	60%	0.15	0.15
Miscellaneous	Cooking	0.24	2%	0%	0.30	0.30
Miscellaneous	Cooling Chillers	0.02	100%	3%	1.76	1.01
Miscellaneous	Cooling DX Evap	0.23	100%	7%	2.41	1.52
Miscellaneous	Cooling Room	0.02	100%	3%	2.44	1.61
Miscellaneous	Fax	1.00	100%	6%	0.02	0.02
Miscellaneous	Flat Screen Monitors	1.00	100%	78%	0.03	0.04
Miscellaneous	Freezers	1.00	100%	100%	0.00	0.00
Miscellaneous	Heat Pump	0.05	100%	4%	5.03	2.74
Miscellaneous	Lighting Exterior	1.00	100%	0%	1.23	1.23
Miscellaneous	Lighting Interior Fluorescent	1.00	100%	0%	2.69	.
Miscellaneous	Lighting Interior HID	1.00	100%	97%	0.94	.
Miscellaneous	Lighting Interior Other	1.00	100%	0%	0.13	3.42
Miscellaneous	Lighting Interior Screw Base	1.00	100%	69%	0.71	.

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Miscellaneous	Other Plug Load	1.00	100%	0%	0.53	0.53
Miscellaneous	Photo Copiers	1.00	100%	83%	0.07	0.07
Miscellaneous	Printers	1.00	100%	70%	0.04	0.03
Miscellaneous	Refrigeration	0.14	100%	0%	0.87	0.87
Miscellaneous	Refrigerators	1.00	100%	100%	0.04	0.04
Miscellaneous	Servers	1.00	100%	4%	0.53	0.52
Miscellaneous	Space Heat	0.84	43%	0%	4.35	2.23
Miscellaneous	Vending Machines	1.00	100%	27%	0.08	0.08
Miscellaneous	Ventilation and Circulation	1.00	100%	0%	2.52	2.13
Miscellaneous	Water Heat GT 55 Gal	0.07	81%	100%	0.17	0.17
Miscellaneous	Water Heat LE 55 Gal	0.76	81%	100%	0.37	0.37
Restaurant	Computers	1.00	100%	60%	0.13	0.13
Restaurant	Cooking	0.72	14%	0%	10.44	10.44
Restaurant	Cooling DX Evap	0.72	100%	15%	4.21	2.45
Restaurant	Fax	1.00	100%	6%	0.02	0.02
Restaurant	Flat Screen Monitors	1.00	100%	78%	0.03	0.03
Restaurant	Freezers	1.00	100%	100%	0.00	0.00
Restaurant	Heat Pump	0.03	100%	3%	7.30	3.98
Restaurant	Lighting Exterior	1.00	100%	0%	2.36	2.36
Restaurant	Lighting Interior Fluorescent	1.00	100%	0%	3.71	.
Restaurant	Lighting Interior HID	1.00	100%	100%	0.26	.
Restaurant	Lighting Interior Other	1.00	100%	0%	0.32	5.78
Restaurant	Lighting Interior Screw Base	1.00	100%	64%	4.47	.
Restaurant	Other Plug Load	1.00	100%	0%	1.22	1.22
Restaurant	Photo Copiers	1.00	100%	83%	0.10	0.11
Restaurant	Printers	1.00	100%	70%	0.04	0.03
Restaurant	Refrigeration	0.79	100%	0%	9.70	9.70
Restaurant	Refrigerators	1.00	100%	100%	0.04	0.04
Restaurant	Space Heat	0.86	54%	0%	4.18	2.04
Restaurant	Ventilation and Circulation	1.00	100%	0%	4.33	4.05
Restaurant	Water Heat GT 55 Gal	0.07	50%	100%	3.85	3.85
Restaurant	Water Heat LE 55 Gal	0.85	50%	100%	8.23	8.23
School	Computers	1.00	100%	60%	0.51	0.48
School	Cooking	0.54	28%	0%	0.36	0.36
School	Cooling Chillers	0.06	100%	3%	0.38	0.28
School	Cooling DX Evap	0.30	100%	11%	0.59	0.46
School	Fax	1.00	100%	6%	0.01	0.01
School	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
School	Freezers	1.00	100%	100%	0.00	0.00
School	Heat Pump	0.05	100%	3%	5.63	2.50
School	Lighting Exterior	1.00	100%	0%	0.76	0.76
School	Lighting Interior Fluorescent	1.00	100%	0%	2.84	.
School	Lighting Interior HID	1.00	100%	85%	0.30	.

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
School	Lighting Interior Other	1.00	100%	0%	0.02	2.57
School	Lighting Interior Screw Base	1.00	100%	98%	0.09	.
School	Other Plug Load	1.00	100%	0%	0.05	0.05
School	Photo Copiers	1.00	100%	83%	0.06	0.07
School	Printers	1.00	100%	70%	0.09	0.07
School	Refrigeration	0.42	100%	0%	0.42	0.42
School	Refrigerators	1.00	100%	100%	0.04	0.04
School	Servers	1.00	100%	4%	0.03	0.03
School	Space Heat	0.92	13%	0%	8.52	3.70
School	Vending Machines	1.00	100%	27%	0.08	0.08
School	Ventilation and Circulation	1.00	100%	0%	1.57	1.19
School	Water Heat GT 55 Gal	0.07	41%	100%	0.67	0.67
School	Water Heat LE 55 Gal	0.86	41%	100%	1.43	1.43
Small Office	Computers	1.00	100%	60%	0.63	0.60
Small Office	Cooling DX Evap	0.61	100%	6%	2.17	1.36
Small Office	Fax	1.00	100%	6%	0.01	0.01
Small Office	Flat Screen Monitors	1.00	100%	78%	0.13	0.14
Small Office	Freezers	1.00	100%	100%	0.00	0.00
Small Office	Heat Pump	0.11	100%	28%	4.99	2.51
Small Office	Lighting Exterior	1.00	100%	0%	1.28	1.28
Small Office	Lighting Interior Fluorescent	1.00	100%	0%	3.22	.
Small Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Small Office	Lighting Interior Other	1.00	100%	0%	0.04	2.74
Small Office	Lighting Interior Screw Base	1.00	100%	54%	0.50	.
Small Office	Other Plug Load	1.00	100%	0%	1.79	1.79
Small Office	Photo Copiers	1.00	100%	83%	0.03	0.03
Small Office	Printers	1.00	100%	70%	0.11	0.09
Small Office	Refrigerators	1.00	100%	100%	0.04	0.04
Small Office	Servers	1.00	100%	4%	0.10	0.10
Small Office	Space Heat	0.80	30%	0%	5.12	2.45
Small Office	Vending Machines	1.00	100%	27%	0.09	0.09
Small Office	Ventilation and Circulation	1.00	100%	0%	2.09	1.83
Small Office	Water Heat GT 55 Gal	0.07	74%	100%	0.21	0.21
Small Office	Water Heat LE 55 Gal	0.85	74%	100%	0.45	0.45
Small Retail	Computers	1.00	100%	60%	0.08	0.08
Small Retail	Cooling DX Evap	0.27	100%	30%	2.27	1.52
Small Retail	Fax	1.00	100%	6%	0.01	0.01
Small Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Small Retail	Freezers	1.00	100%	100%	0.00	0.00
Small Retail	Heat Pump	0.02	100%	3%	4.84	2.92
Small Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Small Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.37	.
Small Retail	Lighting Interior HID	1.00	100%	94%	0.91	.

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Small Retail	Lighting Interior Other	1.00	100%	0%	0.24	6.22
Small Retail	Lighting Interior Screw Base	1.00	100%	54%	1.69	.
Small Retail	Other Plug Load	1.00	100%	0%	1.09	1.09
Small Retail	Photo Copiers	1.00	100%	83%	0.03	0.03
Small Retail	Printers	1.00	100%	70%	0.03	0.02
Small Retail	Refrigerators	1.00	100%	100%	0.01	0.01
Small Retail	Space Heat	0.73	32%	0%	3.59	2.02
Small Retail	Vending Machines	1.00	100%	27%	0.08	0.07
Small Retail	Ventilation and Circulation	1.00	100%	0%	2.95	2.43
Small Retail	Water Heat GT 55 Gal	0.06	87%	100%	0.13	0.13
Small Retail	Water Heat LE 55 Gal	0.72	87%	100%	0.29	0.28
Warehouse	Computers	1.00	100%	60%	0.10	0.10
Warehouse	Cooling Chillers	0.04	100%	3%	0.32	0.22
Warehouse	Cooling DX Evap	0.24	100%	11%	0.42	0.32
Warehouse	Fax	1.00	100%	6%	0.01	0.01
Warehouse	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Warehouse	Freezers	1.00	100%	100%	0.00	0.00
Warehouse	Heat Pump	0.04	100%	3%	1.05	0.91
Warehouse	Lighting Exterior	1.00	100%	0%	0.28	0.28
Warehouse	Lighting Interior Fluorescent	1.00	100%	1%	1.15	.
Warehouse	Lighting Interior HID	1.00	100%	72%	0.99	.
Warehouse	Lighting Interior Other	1.00	100%	0%	0.01	1.72
Warehouse	Lighting Interior Screw Base	1.00	100%	51%	0.53	.
Warehouse	Other Plug Load	1.00	100%	0%	0.23	0.23
Warehouse	Photo Copiers	1.00	100%	83%	0.04	0.04
Warehouse	Printers	1.00	100%	70%	0.02	0.02
Warehouse	Refrigerators	1.00	100%	100%	0.01	0.01
Warehouse	Space Heat	0.59	16%	0%	2.11	1.75
Warehouse	Vending Machines	1.00	100%	27%	0.03	0.03
Warehouse	Ventilation and Circulation	1.00	100%	0%	0.51	0.50
Warehouse	Water Heat GT 55 Gal	0.07	52%	100%	0.09	0.09
Warehouse	Water Heat LE 55 Gal	0.81	52%	100%	0.20	0.20
Warehouse Controlled Atmosphere	Lighting Exterior	1.00	100%	0%	0.35	0.35
Warehouse Controlled Atmosphere	Lighting Interior HID	1.00	100%	0%	2.81	.
Warehouse Controlled Atmosphere	Lighting Interior Other	1.00	100%	0%	0.01	1.72
Warehouse Controlled Atmosphere	Refrigeration	0.26	100%	0%	92.18	92.18

Table C-1.12. Wyoming Commercial Saturations, Fuel Shares, Share Above Standard, and EUIs

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Grocery	Computers	1.00	100%	60%	0.04	0.04
Grocery	Cooking	0.56	22%	0%	2.17	2.17
Grocery	Cooling DX Evap	0.73	100%	23%	3.36	1.81
Grocery	Fax	1.00	100%	6%	0.01	0.01
Grocery	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Grocery	Freezers	1.00	100%	0%	0.02	0.02
Grocery	Heat Pump	0.05	100%	3%	8.66	4.13
Grocery	Lighting Exterior	1.00	100%	0%	1.05	1.05
Grocery	Lighting Interior Fluorescent	1.00	100%	7%	7.70	.
Grocery	Lighting Interior HID	1.00	100%	94%	1.11	.
Grocery	Lighting Interior Other	1.00	100%	0%	0.16	8.41
Grocery	Lighting Interior Screw Base	1.00	100%	100%	0.64	.
Grocery	Other Plug Load	1.00	100%	0%	0.92	0.92
Grocery	Photo Copiers	1.00	100%	83%	0.05	0.05
Grocery	Printers	1.00	100%	70%	0.01	0.01
Grocery	Refrigeration	0.72	100%	0%	22.36	22.36
Grocery	Refrigerators	1.00	100%	0%	0.15	0.15
Grocery	Space Heat	0.83	27%	0%	5.91	2.60
Grocery	Vending Machines	1.00	100%	27%	0.05	0.05
Grocery	Ventilation and Circulation	1.00	100%	0%	4.21	4.40
Grocery	Water Heat GT 55 Gal	0.08	60%	11%	0.40	0.39
Grocery	Water Heat LE 55 Gal	0.92	60%	11%	0.41	0.39
Health	Computers	1.00	100%	60%	0.31	0.29
Health	Cooking	0.26	2%	0%	0.44	0.44
Health	Cooling Chillers	0.13	100%	3%	1.03	0.49
Health	Cooling DX Evap	0.75	100%	18%	1.37	0.71
Health	Fax	1.00	100%	6%	0.01	0.01
Health	Flat Screen Monitors	1.00	100%	78%	0.06	0.07
Health	Freezers	1.00	100%	0%	0.01	0.01
Health	Heat Pump	0.04	100%	6%	9.63	6.03
Health	Lighting Exterior	1.00	100%	0%	0.58	0.58
Health	Lighting Interior Fluorescent	1.00	100%	62%	5.84	.
Health	Lighting Interior HID	1.00	100%	60%	0.12	.
Health	Lighting Interior Other	1.00	100%	0%	0.27	5.67
Health	Lighting Interior Screw Base	1.00	100%	51%	1.96	.
Health	Other Plug Load	1.00	100%	0%	2.50	2.50
Health	Photo Copiers	1.00	100%	83%	0.03	0.03
Health	Printers	1.00	100%	70%	0.08	0.07
Health	Refrigeration	0.30	100%	0%	0.64	0.64
Health	Refrigerators	1.00	100%	0%	0.09	0.09

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Health	Servers	1.00	100%	4%	0.05	0.05
Health	Space Heat	0.91	12%	0%	12.40	8.42
Health	Vending Machines	1.00	100%	27%	0.07	0.07
Health	Ventilation and Circulation	1.00	100%	0%	6.78	5.73
Health	Water Heat GT 55 Gal	0.08	30%	11%	2.10	2.06
Health	Water Heat LE 55 Gal	0.87	30%	11%	2.15	2.07
Large Office	Computers	1.00	100%	60%	0.51	0.48
Large Office	Cooling Chillers	0.20	100%	3%	0.98	0.59
Large Office	Cooling DX Evap	0.16	100%	23%	1.48	0.97
Large Office	Fax	1.00	100%	6%	0.01	0.01
Large Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Large Office	Freezers	1.00	100%	0%	0.01	0.01
Large Office	Heat Pump	0.08	100%	28%	7.61	3.40
Large Office	Lighting Exterior	1.00	100%	0%	0.51	0.51
Large Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Large Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Large Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Large Office	Lighting Interior Screw Base	1.00	100%	40%	0.51	.
Large Office	Other Plug Load	1.00	100%	0%	0.47	0.47
Large Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Large Office	Printers	1.00	100%	70%	0.10	0.09
Large Office	Refrigerators	1.00	100%	0%	0.06	0.06
Large Office	Servers	1.00	100%	4%	0.08	0.08
Large Office	Space Heat	0.84	20%	0%	9.05	3.99
Large Office	Vending Machines	1.00	100%	27%	0.09	0.09
Large Office	Ventilation and Circulation	1.00	100%	0%	3.24	2.76
Large Office	Water Heat GT 55 Gal	0.07	30%	11%	0.50	0.49
Large Office	Water Heat LE 55 Gal	0.77	30%	11%	0.51	0.49
Large Retail	Computers	1.00	100%	60%	0.09	0.09
Large Retail	Cooling DX Evap	0.33	100%	23%	1.60	1.16
Large Retail	Fax	1.00	100%	6%	0.01	0.01
Large Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Large Retail	Freezers	1.00	100%	0%	0.00	0.00
Large Retail	Heat Pump	0.07	100%	3%	6.20	3.46
Large Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Large Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Large Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Large Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Large Retail	Lighting Interior Screw Base	1.00	100%	40%	1.78	.
Large Retail	Other Plug Load	1.00	100%	0%	0.52	0.52
Large Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Large Retail	Printers	1.00	100%	70%	0.03	0.02
Large Retail	Refrigerators	1.00	100%	0%	0.04	0.04

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Large Retail	Space Heat	0.55	14%	0%	6.13	3.28
Large Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Large Retail	Ventilation and Circulation	1.00	100%	0%	2.28	1.89
Large Retail	Water Heat GT 55 Gal	0.07	42%	11%	0.24	0.23
Large Retail	Water Heat LE 55 Gal	0.80	42%	11%	0.25	0.23
Lodging	Computers	1.00	100%	60%	0.20	0.19
Lodging	Cooking	0.60	0%	0%	0.72	0.72
Lodging	Cooling Chillers	0.15	100%	3%	1.41	0.65
Lodging	Cooling DX Evap	0.29	100%	23%	1.55	0.80
Lodging	Cooling Room	0.22	100%	3%	1.75	0.94
Lodging	Fax	1.00	100%	6%	0.00	0.00
Lodging	Flat Screen Monitors	1.00	100%	78%	0.04	0.05
Lodging	Freezers	1.00	100%	0%	0.01	0.01
Lodging	Heat Pump	0.15	100%	7%	6.97	4.36
Lodging	Lighting Exterior	1.00	100%	0%	0.66	0.66
Lodging	Lighting Interior Fluorescent	1.00	100%	3%	1.16	.
Lodging	Lighting Interior HID	1.00	100%	99%	0.04	.
Lodging	Lighting Interior Other	1.00	100%	0%	0.04	2.55
Lodging	Lighting Interior Screw Base	1.00	100%	61%	3.43	.
Lodging	Other Plug Load	1.00	100%	0%	0.65	0.65
Lodging	Photo Copiers	1.00	100%	83%	0.02	0.02
Lodging	Printers	1.00	100%	70%	0.02	0.01
Lodging	Refrigeration	0.11	100%	0%	1.40	1.40
Lodging	Refrigerators	1.00	100%	0%	0.10	0.10
Lodging	Space Heat	0.78	28%	0%	7.69	5.72
Lodging	Vending Machines	1.00	100%	27%	0.06	0.06
Lodging	Ventilation and Circulation	1.00	100%	0%	2.64	2.64
Lodging	Water Heat GT 55 Gal	0.08	19%	11%	1.82	1.80
Lodging	Water Heat LE 55 Gal	0.87	19%	11%	1.86	1.81
Miscellaneous	Computers	1.00	100%	60%	0.12	0.12
Miscellaneous	Cooking	0.31	2%	0%	0.30	0.30
Miscellaneous	Cooling Chillers	0.01	100%	3%	1.20	0.69
Miscellaneous	Cooling DX Evap	0.38	100%	34%	1.37	0.88
Miscellaneous	Fax	1.00	100%	6%	0.01	0.01
Miscellaneous	Flat Screen Monitors	1.00	100%	78%	0.03	0.03
Miscellaneous	Freezers	1.00	100%	0%	0.01	0.01
Miscellaneous	Heat Pump	0.02	100%	4%	7.12	3.41
Miscellaneous	Lighting Exterior	1.00	100%	0%	1.23	1.23
Miscellaneous	Lighting Interior Fluorescent	1.00	100%	0%	2.88	.
Miscellaneous	Lighting Interior HID	1.00	100%	97%	0.98	.
Miscellaneous	Lighting Interior Other	1.00	100%	0%	0.13	3.76
Miscellaneous	Lighting Interior Screw Base	1.00	100%	63%	0.77	.
Miscellaneous	Other Plug Load	1.00	100%	0%	1.01	1.01

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Miscellaneous	Photo Copiers	1.00	100%	83%	0.07	0.07
Miscellaneous	Printers	1.00	100%	70%	0.03	0.03
Miscellaneous	Refrigeration	0.11	100%	0%	0.81	0.81
Miscellaneous	Refrigerators	1.00	100%	0%	0.05	0.05
Miscellaneous	Servers	1.00	100%	4%	0.01	0.01
Miscellaneous	Space Heat	0.72	19%	0%	7.59	3.64
Miscellaneous	Vending Machines	1.00	100%	27%	0.12	0.12
Miscellaneous	Ventilation and Circulation	1.00	100%	0%	2.25	1.89
Miscellaneous	Water Heat GT 55 Gal	0.06	26%	11%	0.37	0.36
Miscellaneous	Water Heat LE 55 Gal	0.70	26%	11%	0.38	0.36
Restaurant	Computers	1.00	100%	60%	0.05	0.05
Restaurant	Cooking	0.81	20%	0%	10.44	10.44
Restaurant	Cooling DX Evap	0.70	100%	12%	3.67	2.06
Restaurant	Fax	1.00	100%	6%	0.06	0.06
Restaurant	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Restaurant	Freezers	1.00	100%	0%	0.03	0.03
Restaurant	Lighting Exterior	1.00	100%	0%	2.36	2.36
Restaurant	Lighting Interior Fluorescent	1.00	100%	0%	4.54	.
Restaurant	Lighting Interior HID	1.00	100%	100%	0.31	.
Restaurant	Lighting Interior Other	1.00	100%	0%	0.32	7.70
Restaurant	Lighting Interior Screw Base	1.00	100%	83%	4.38	.
Restaurant	Other Plug Load	1.00	100%	0%	0.83	0.83
Restaurant	Photo Copiers	1.00	100%	83%	0.28	0.28
Restaurant	Printers	1.00	100%	70%	0.01	0.01
Restaurant	Refrigeration	0.77	100%	0%	9.00	9.00
Restaurant	Refrigerators	1.00	100%	0%	0.31	0.31
Restaurant	Space Heat	0.93	16%	0%	4.66	2.21
Restaurant	Ventilation and Circulation	1.00	100%	0%	4.03	4.01
Restaurant	Water Heat GT 55 Gal	0.07	9%	11%	9.00	8.92
Restaurant	Water Heat LE 55 Gal	0.85	9%	11%	9.21	8.95
School	Computers	1.00	100%	60%	0.46	0.44
School	Cooking	0.60	28%	0%	0.36	0.36
School	Cooling Chillers	0.23	100%	3%	0.18	0.14
School	Cooling DX Evap	0.40	100%	23%	0.26	0.21
School	Fax	1.00	100%	6%	0.01	0.01
School	Flat Screen Monitors	1.00	100%	78%	0.10	0.11
School	Freezers	1.00	100%	0%	0.00	0.00
School	Lighting Exterior	1.00	100%	0%	0.76	0.76
School	Lighting Interior Fluorescent	1.00	100%	0%	3.08	.
School	Lighting Interior HID	1.00	100%	85%	0.32	.
School	Lighting Interior Other	1.00	100%	0%	0.02	3.08
School	Lighting Interior Screw Base	1.00	100%	40%	0.16	.
School	Other Plug Load	1.00	100%	0%	0.12	0.12

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
School	Photo Copiers	1.00	100%	83%	0.04	0.04
School	Printers	1.00	100%	70%	0.04	0.04
School	Refrigeration	0.35	100%	0%	0.42	0.42
School	Refrigerators	1.00	100%	0%	0.03	0.03
School	Servers	1.00	100%	4%	0.03	0.03
School	Space Heat	0.97	13%	0%	19.60	11.61
School	Vending Machines	1.00	100%	27%	0.09	0.09
School	Ventilation and Circulation	1.00	100%	0%	2.15	1.74
School	Water Heat GT 55 Gal	0.07	41%	11%	1.61	1.60
School	Water Heat LE 55 Gal	0.83	41%	11%	1.65	1.60
Small Office	Computers	1.00	100%	60%	0.51	0.48
Small Office	Cooling DX Evap	0.69	100%	9%	1.56	0.96
Small Office	Fax	1.00	100%	6%	0.01	0.01
Small Office	Flat Screen Monitors	1.00	100%	78%	0.11	0.12
Small Office	Freezers	1.00	100%	0%	0.01	0.01
Small Office	Lighting Exterior	1.00	100%	0%	1.28	1.28
Small Office	Lighting Interior Fluorescent	1.00	100%	0%	3.36	.
Small Office	Lighting Interior HID	1.00	100%	91%	0.13	.
Small Office	Lighting Interior Other	1.00	100%	0%	0.04	3.02
Small Office	Lighting Interior Screw Base	1.00	100%	60%	0.50	.
Small Office	Other Plug Load	1.00	100%	0%	1.31	1.31
Small Office	Photo Copiers	1.00	100%	83%	0.05	0.05
Small Office	Printers	1.00	100%	70%	0.10	0.09
Small Office	Refrigerators	1.00	100%	0%	0.06	0.06
Small Office	Servers	1.00	100%	4%	0.08	0.08
Small Office	Space Heat	0.93	23%	0%	9.05	3.99
Small Office	Vending Machines	1.00	100%	27%	0.09	0.09
Small Office	Ventilation and Circulation	1.00	100%	0%	2.22	1.89
Small Office	Water Heat GT 55 Gal	0.07	38%	11%	0.50	0.49
Small Office	Water Heat LE 55 Gal	0.83	38%	11%	0.51	0.49
Small Retail	Computers	1.00	100%	60%	0.09	0.09
Small Retail	Cooling DX Evap	0.52	100%	36%	1.39	0.96
Small Retail	Fax	1.00	100%	6%	0.01	0.01
Small Retail	Flat Screen Monitors	1.00	100%	78%	0.02	0.02
Small Retail	Freezers	1.00	100%	0%	0.00	0.00
Small Retail	Lighting Exterior	1.00	100%	0%	1.11	1.11
Small Retail	Lighting Interior Fluorescent	1.00	100%	1%	5.82	.
Small Retail	Lighting Interior HID	1.00	100%	94%	0.96	.
Small Retail	Lighting Interior Other	1.00	100%	0%	0.24	7.01
Small Retail	Lighting Interior Screw Base	1.00	100%	77%	1.55	.
Small Retail	Other Plug Load	1.00	100%	0%	0.93	0.93
Small Retail	Photo Copiers	1.00	100%	83%	0.06	0.06
Small Retail	Printers	1.00	100%	70%	0.03	0.02

Segment	End Use	Saturation	Electric Fuel Share	Share of Equipment Above Standard	Weighted Average EUI (kWh/sqft) - Existing	Weighted Average EUI (kWh/sqft) - New
Small Retail	Refrigerators	1.00	100%	0%	0.04	0.04
Small Retail	Space Heat	0.84	17%	0%	6.13	3.28
Small Retail	Vending Machines	1.00	100%	27%	0.19	0.19
Small Retail	Ventilation and Circulation	1.00	100%	0%	2.28	1.89
Small Retail	Water Heat GT 55 Gal	0.05	34%	11%	0.24	0.23
Small Retail	Water Heat LE 55 Gal	0.56	34%	11%	0.25	0.23
Warehouse	Computers	1.00	100%	60%	0.05	0.05
Warehouse	Cooling Chillers	0.04	100%	3%	0.41	0.23
Warehouse	Cooling DX Evap	0.24	100%	23%	0.51	0.32
Warehouse	Fax	1.00	100%	6%	0.01	0.01
Warehouse	Flat Screen Monitors	1.00	100%	78%	0.01	0.01
Warehouse	Freezers	1.00	100%	0%	0.00	0.00
Warehouse	Heat Pump	0.04	100%	3%	3.69	2.76
Warehouse	Lighting Exterior	1.00	100%	0%	0.28	0.28
Warehouse	Lighting Interior Fluorescent	1.00	100%	1%	1.49	.
Warehouse	Lighting Interior HID	1.00	100%	72%	1.18	.
Warehouse	Lighting Interior Other	1.00	100%	0%	0.01	2.75
Warehouse	Lighting Interior Screw Base	1.00	100%	40%	0.62	.
Warehouse	Other Plug Load	1.00	100%	0%	0.35	0.35
Warehouse	Photo Copiers	1.00	100%	83%	0.03	0.03
Warehouse	Printers	1.00	100%	70%	0.01	0.01
Warehouse	Refrigerators	1.00	100%	0%	0.02	0.02
Warehouse	Space Heat	0.59	16%	0%	7.66	5.71
Warehouse	Vending Machines	1.00	100%	27%	0.06	0.06
Warehouse	Ventilation and Circulation	1.00	100%	0%	1.47	1.02
Warehouse	Water Heat GT 55 Gal	0.07	52%	11%	0.35	0.34
Warehouse	Water Heat LE 55 Gal	0.81	52%	11%	0.36	0.34

Table C-1.13. Utah Data Center End Use Consumption

Segment	End Use	Base Year (2012) End Use Consumption - kWh	Percent of Total
Data Center	Fans	12,330,436	10%
Data Center	HVAC	30,826,091	25%
Data Center	Lighting	1,233,044	1%
Data Center	Other	78,914,792	64%

Table C-1.14. Industrial and Irrigation End Use Percents by Segment

End Use	Chem. Mfg.	Electronic Equip. Mfg.	Food Mfg.	Indust. Machinery	Irrigation	Lumber Wood Products	Mining	Mining: Wyoming	Misc. Mfg.	Paper Mfg.	Petroleum Refining	Metal Mfg.	Stone Clay Glass Products	Transp. Equip. Mfg.	Wastewater	Water
Fans	7%	4%	4%	7%	0%	10%	0%	0%	6%	16%	11%	5%	8%	5%	0%	10%
Hvac	6%	17%	7%	18%	0%	7%	0%	0%	20%	4%	3%	4%	6%	19%	0%	0%
Indirect Boiler	1%	0%	1%	0%	0%	1%	0%	0%	9%	3%	1%	0%	0%	0%	0%	0%
Lighting	4%	13%	7%	14%	0%	7%	0%	0%	15%	4%	2%	3%	5%	15%	2%	2%
Motors Other	15%	10%	19%	19%	0%	28%	88%	77%	22%	32%	31%	20%	23%	12%	0%	10%
Other	2%	8%	7%	7%	10%	8%	0%	0%	4%	2%	1%	1%	4%	4%	14%	14%
Process Aircomp	16%	10%	4%	8%	0%	11%	0%	0%	5%	4%	13%	5%	9%	12%	66%	0%
Process Cool	9%	4%	25%	3%	0%	1%	0%	0%	6%	1%	6%	1%	3%	5%	0%	0%
Process Electro Chemical	18%	3%	0%	1%	0%	0%	0%	0%	0%	2%	0%	31%	0%	1%	0%	0%
Process Heat	3%	19%	3%	7%	0%	5%	6%	0%	9%	2%	6%	28%	20%	10%	0%	0%
Process Other	0%	1%	0%	1%	0%	0%	5%	22%	0%	0%	0%	0%	1%	1%	0%	0%
Process Refrig	4%	3%	15%	3%	0%	5%	0%	0%	0%	4%	5%	0%	4%	3%	0%	0%
Pumps	15%	9%	8%	12%	90%	18%	1%	1%	3%	25%	20%	3%	15%	11%	18%	64%

Source: U.S. Energy Information Administration (EIA), Manufacturing Energy Consumption Survey (MECS) 2006 (for manufacturing industries only).
Mining: DOE EERE http://www1.eere.energy.gov/manufacturing/resources/mining/pdfs/appendix.pdf
Water/Wastewater: Puget Sound Energy (PSE) survey of wastewater treatment plants, 2003.

Note: Values may not sum to 100% due to rounding.

APPENDIX C-2. TECHNICAL SUPPLEMENTS: ENERGY EFFICIENCY RESOURCES, MEASURE INPUTS

Appendix C-2 is a comprehensive list of the Class 2 measures considered. For each measure, the following are provided:

- **Measure Description**: Technical description of the measure, including measure efficiency.
- **Baseline Description**: Description of measure baseline used to calculate incremental costs and first-year kWh savings.
- **Unit Description**: Units for savings and incremental costs.
- **Construction Vintage**: New or existing construction.
- **Savings Per Unit (kWh)**: First-year kWh savings, without interactions.
- **Measure Life**: Expected life of measure.
- **Incremental Cost Per Unit**: Includes incremental equipment, labor, and present value O&M.
- **Percent of Installations Technically Feasible**: The proportion of units (homes, buildings, equipment, etc.) that can receive the measure. Accounts for technical limitations of installing the measure.
- **Percent of Installations Incomplete**: Proportion of units (homes, building, equipment, etc.) that have not received the measure.
- **Levelized Cost**: Cost ($) per kWh saved
- **2032 Cumulative Achievable Technical Potential**: Represents cumulative annual energy savings in 2032. This value accounts for the impact of standards, in years after standards go into effect and is consistent with totals presented in Volume I.
- **20-Year Incremental Achievable Technical Potential**: Represents the sum of 20-year incremental savings. This value is consistent with what PacifiCorp used for IRP modeling.

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	56	56
California	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	0.87	0.87
California	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	3	3
California	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	0.11	0.11
California	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	168	18	$1,585	2.5%	95%	$0.98	3	3
California	Manufactured	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	33	45	$426	40%	95%	$1.08	10	10
California	Manufactured	Cool Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	201	45	$1,887	65%	35%	$0.80	36	36
California	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	322	15	$1,764	100%	N/A	$0.62	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	207	15	$882	100%	N/A	$0.49	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	448	15	$2,941	100%	N/A	$0.75	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	163	15	$588	100%	N/A	$0.41	0.00	0.00
California	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,287	15	$-1529.75	32%	N/A	$-0.14	150	197
California	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	0.16	20	$163	25%	90%	$99.39	0.00	0.00
California	Manufactured	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	66	18	$715	25%	75%	$1.12	10	10
California	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	69	5	$300	95%	65%	$1.00	34	34
California	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	172	30	$675	10%	90%	$0.36	11	11
California	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	114	11	$895	10%	95%	$1.06	8	8
California	Manufactured	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	53	5	$200	95%	65%	$0.87	26	26
California	Manufactured	Cool Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	179	45	$1,834	75%	25%	$0.87	24	24
California	Manufactured	Cool Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	53	45	$324	5.0%	50%	$0.51	0.96	0.96
California	Manufactured	Cool Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	189	45	$1,834	5.0%	25%	$0.83	1	1

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	253	20	$455	50%	95%	$0.18	97	97
California	Manufactured	Cool Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	346	45	$4,747	65%	25%	$1.17	36	36
California	Manufactured	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	126	45	$2,435	65%	25%	$1.63	1	1
California	Manufactured	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	176	45	$11,037	95%	75%	$5.34	79	79
California	Manufactured	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	174	45	$10,659	95%	95%	$5.21	0.00	0.00
California	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	89	18	$1,585	20%	95%	$1.84	0.15	0.15
California	Manufactured	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	20	45	$426	60%	95%	$1.81	0.07	0.07
California	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	185	15	$1,439	100%	N/A	$0.88	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	119	15	$719	100%	N/A	$0.69	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	258	15	$2,399	100%	N/A	$1.06	0.00	0.00
California	Manufactured	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	94	15	$479	100%	N/A	$0.58	0.00	0.00
California	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	669	15	$-1229.5329	65%	N/A	$-0.21	3	3
California	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	0.16	20	$163	25%	90%	$99.39	0.00	0.00
California	Manufactured	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	51	40	$198	75%	50%	$0.33	0.10	0.10
California	Manufactured	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	44	40	$23,440	5.0%	100%	$45.36	0.00	0.00
California	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	36	5	$300	95%	65%	$1.89	0.34	0.34
California	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	91	30	$480	25%	90%	$0.48	0.10	0.10
California	Manufactured	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	2	45	$629	20%	65%	$22.07	0.00	0.00
California	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	60	11	$895	20%	95%	$2.01	0.14	0.14
California	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	134	20	$455	50%	95%	$0.34	0.34	0.34
California	Manufactured	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	90	45	$2,435	95%	60%	$2.29	0.01	0.01

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	121	45	$11,037	95%	75%	$7.72	0.38	0.38
California	Manufactured	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	113	45	$10,659	95%	95%	$7.97	0.00	0.00
California	Manufactured	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	9	45	$426	40%	95%	$3.68	1	1
California	Manufactured	Cool Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	59	45	$1,887	65%	35%	$2.71	4	4
California	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	171	20	$1,166	50%	N/A	$0.68	10	13
California	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	50	30	$675	10%	90%	$1.23	1	1
California	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	40	9	$41	100%	N/A	$0.16	0.00	0.00
California	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	48	9	$308	100%	N/A	$0.98	0.09	1
California	Manufactured	Cool Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	52	45	$1,834	75%	25%	$2.96	3	3
California	Manufactured	Cool Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	15	45	$324	5.0%	50%	$1.75	0.12	0.12
California	Manufactured	Cool Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	55	45	$1,834	5.0%	25%	$2.81	0.22	0.22
California	Manufactured	Cool Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	101	45	$4,747	65%	25%	$3.97	5	5
California	Manufactured	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	37	45	$2,435	65%	25%	$5.57	0.14	0.14
California	Manufactured	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	51	45	$11,037	95%	75%	$18.19	11	11
California	Manufactured	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	51	45	$10,659	95%	95%	$17.74	0.00	0.00
California	Manufactured	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	7	45	$426	60%	95%	$4.87	0.02	0.02
California	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	57	20	$960	95%	N/A	$1.66	0.07	0.07
California	Manufactured	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	16	40	$23,440	5.0%	100%	$121.90	0.00	0.00
California	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	33	30	$480	25%	90%	$1.30	0.03	0.03
California	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	28	9	$41	100%	N/A	$0.22	0.00	0.00
California	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	33	9	$308	100%	N/A	$1.38	0.00	0.00
California	Manufactured	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.90	45	$629	20%	65%	$59.31	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	33	45	$2,435	95%	60%	$6.15	0.00	0.00
California	Manufactured	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	45	45	$11,037	95%	75%	$20.74	0.12	0.12
California	Manufactured	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	42	45	$10,659	95%	95%	$21.43	0.00	0.00
California	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	10	10
California	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	0.27	0.27
California	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	0.00	0.00
California	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.00	0.00
California	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	156	11	$372	100%	N/A	$0.33	33	156
California	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	146	11	$343	100%	N/A	$0.32	0.00	0.00
California	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	38	11	$75	100%	N/A	$0.27	0.00	0.00
California	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	156	11	$372	100%	N/A	$0.33	1	6
California	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	146	11	$343	100%	N/A	$0.32	0.00	0.00
California	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	38	11	$75	100%	N/A	$0.27	0.00	0.00
California	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$3	100%	N/A	$0.00	0.00	2
California	Manufactured	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	869	20	$131	17%	100%	$0.02	378	378
California	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	111	20	$3	100%	N/A	$0.00	0.00	0.22
California	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,166	18	$1,585	2.5%	95%	$0.14	51	51
California	Manufactured	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	107	45	$426	40%	95%	$0.34	75	75
California	Manufactured	Heat Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	684	45	$1,887	65%	35%	$0.23	287	287
California	Manufactured	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	206	20	$121	100%	80%	$0.06	300	300

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	131	20	$56	100%	60%	$0.04	0.00	0.00
California	Manufactured	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	211	18	$715	25%	75%	$0.35	73	73
California	Manufactured	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	111	45	$415	25%	85%	$0.32	41	41
California	Manufactured	Heat Central	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,259	45	$1,345	25%	5%	$0.05	49	49
California	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,909	20	$9,122	50%	N/A	$0.15	2,310	2,573
California	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,497	20	$7,586	0.0%	N/A	$0.14	0.00	0.00
California	Manufactured	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	123	11	$277	75%	50%	$0.31	82	82
California	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	194	30	$675	10%	90%	$0.28	30	30
California	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	660	11	$895	10%	95%	$0.18	110	110
California	Manufactured	Heat Central	Tune-up - Furnace (Electric)	Furnace with Tune-up	Furnace with no Tune-up	#N/A	Existing	.	.	$.	100%	N/A	.	0.00	0.00
California	Manufactured	Heat Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,924	45	$1,834	75%	25%	$0.08	639	639
California	Manufactured	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	681	45	$324	5.0%	50%	$0.04	29	29
California	Manufactured	Heat Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,029	45	$1,834	5.0%	25%	$0.08	43	43
California	Manufactured	Heat Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	880	45	$4,747	65%	25%	$0.46	239	239
California	Manufactured	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	62	45	$2,435	65%	25%	$3.34	1	1
California	Manufactured	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	154	45	$11,037	95%	75%	$6.07	0.00	0.00
California	Manufactured	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	270	45	$10,659	95%	95%	$3.35	402	402
California	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	827	18	$1,585	20%	95%	$0.20	4	4
California	Manufactured	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	222	45	$426	60%	95%	$0.16	2	2
California	Manufactured	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	460	20	$121	100%	80%	$0.03	6	6
California	Manufactured	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	299	20	$56	100%	60%	$0.02	0.00	0.00
California	Manufactured	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	456	40	$198	75%	50%	$0.04	2	2
California	Manufactured	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	173	45	$415	75%	85%	$0.20	1	1
California	Manufactured	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	344	40	$23,440	5.0%	100%	$5.77	0.06	0.06
California	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,252	20	$6,355	50%	N/A	$0.15	26	31

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,975	20	$5,101	0.0%	N/A	$0.13	0.00	0.00
California	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	137	30	$480	25%	90%	$0.29	0.46	0.46
California	Manufactured	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	25	45	$629	20%	65%	$2.11	0.05	0.05
California	Manufactured	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,237	20	$715	0.0%	95%	$0.06	0.00	0.00
California	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	468	11	$895	20%	95%	$0.26	3	3
California	Manufactured	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	1,122	45	$324	85%	50%	$0.02	8	8
California	Manufactured	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	161	45	$2,435	95%	60%	$1.28	0.06	0.06
California	Manufactured	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	358	45	$11,037	95%	75%	$2.62	0.00	0.00
California	Manufactured	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	584	45	$10,659	95%	95%	$1.55	7	7
California	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	330	18	$1,585	2.5%	95%	$0.50	5	5
California	Manufactured	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	53	45	$426	40%	95%	$0.67	14	14
California	Manufactured	Heat Pump	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	338	45	$1,887	65%	35%	$0.47	54	54
California	Manufactured	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	72	20	$121	100%	80%	$0.17	40	40
California	Manufactured	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	46	20	$56	100%	60%	$0.12	0.00	0.00
California	Manufactured	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	105	18	$715	25%	75%	$0.71	14	14
California	Manufactured	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	27	45	$415	25%	85%	$1.27	4	4
California	Manufactured	Heat Pump	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	630	45	$1,345	25%	5%	$0.18	5	5
California	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	411	20	$1,536	100%	N/A	$0.37	0.00	0.00
California	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	272	20	$1,152	100%	N/A	$0.42	0.00	0.00
California	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	623	20	$2,305	100%	N/A	$0.37	66	85
California	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	211	20	$768	100%	N/A	$0.36	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,018	20	$9,791	2.5%	N/A	$0.96	3	4
California	Manufactured	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	32	11	$277	75%	50%	$1.17	8	8
California	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	99	5	$300	95%	65%	$0.70	44	44
California	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	21	30	$675	10%	90%	$2.89	1	1
California	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	301	11	$895	10%	95%	$0.41	19	19
California	Manufactured	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	76	5	$200	20%	75%	$0.61	8	8
California	Manufactured	Heat Pump	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	759	45	$1,834	75%	25%	$0.21	95	95
California	Manufactured	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	264	45	$324	5.0%	50%	$0.10	4	4
California	Manufactured	Heat Pump	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	801	45	$1,834	5.0%	25%	$0.19	6	6
California	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	34	20	$455	50%	95%	$1.31	11	11
California	Manufactured	Heat Pump	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	474	45	$4,747	65%	25%	$0.85	49	49
California	Manufactured	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	78	45	$2,435	65%	25%	$2.66	0.61	0.61
California	Manufactured	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	132	45	$11,037	95%	75%	$7.07	0.00	0.00
California	Manufactured	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	173	45	$10,659	95%	95%	$5.24	98	98
California	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	236	18	$1,585	20%	95%	$0.70	0.51	0.51
California	Manufactured	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	85	45	$426	60%	95%	$0.43	0.38	0.38
California	Manufactured	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	127	20	$121	100%	80%	$0.09	0.67	0.67
California	Manufactured	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	83	20	$56	100%	60%	$0.07	0.00	0.00
California	Manufactured	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	187	40	$198	75%	50%	$0.09	0.47	0.47
California	Manufactured	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	41	45	$415	75%	85%	$0.86	0.19	0.19
California	Manufactured	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	145	40	$23,440	5.0%	100%	$13.98	0.01	0.01
California	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	276	20	$1,253	100%	N/A	$0.45	0.00	0.00
California	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	179	20	$940	100%	N/A	$0.52	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	423	20	$1,880	100%	N/A	$0.44	2	2
California	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	138	20	$626	100%	N/A	$0.45	0.00	0.00
California	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	829	20	$8,113	5.0%	N/A	$0.97	0.33	0.30
California	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	60	5	$300	95%	65%	$1.15	0.69	0.69
California	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	12	30	$480	25%	90%	$3.49	0.01	0.01
California	Manufactured	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	9	45	$629	20%	65%	$5.57	0.00	0.00
California	Manufactured	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	302	20	$715	0.0%	95%	$0.23	0.00	0.00
California	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	197	11	$895	20%	95%	$0.62	0.58	0.58
California	Manufactured	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	354	45	$324	85%	50%	$0.08	1	1
California	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	18	20	$455	50%	95%	$2.42	0.06	0.06
California	Manufactured	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	139	45	$2,435	95%	60%	$1.49	0.02	0.02
California	Manufactured	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	228	45	$11,037	95%	75%	$4.12	0.00	0.00
California	Manufactured	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	285	45	$10,659	95%	95%	$3.18	1	1
California	Manufactured	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	96	45	$426	40%	95%	$0.38	6	6
California	Manufactured	Heat Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	611	45	$1,887	65%	35%	$0.26	23	23
California	Manufactured	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	184	20	$121	100%	80%	$0.07	25	25
California	Manufactured	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	117	20	$56	100%	60%	$0.05	0.00	0.00
California	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,338	20	$1,166	50%	N/A	$0.05	52	59
California	Manufactured	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	99	45	$415	25%	85%	$0.36	3	3
California	Manufactured	Heat Room	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,017	45	$1,345	25%	5%	$0.06	4	4
California	Manufactured	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	110	11	$277	75%	50%	$0.34	6	6
California	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	173	30	$675	10%	90%	$0.31	2	2
California	Manufactured	Heat Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,719	45	$1,834	75%	25%	$0.09	53	53

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	608	45	$324	5.0%	50%	$0.05	2	2
California	Manufactured	Heat Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,812	45	$1,834	5.0%	25%	$0.09	3	3
California	Manufactured	Heat Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	786	45	$4,747	65%	25%	$0.51	20	20
California	Manufactured	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	55	45	$2,435	65%	25%	$3.74	0.10	0.10
California	Manufactured	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	138	45	$11,037	95%	75%	$6.80	0.00	0.00
California	Manufactured	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	241	45	$10,659	95%	95%	$3.76	33	33
California	Manufactured	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	207	45	$426	60%	95%	$0.17	0.17	0.17
California	Manufactured	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	430	20	$121	100%	80%	$0.03	0.43	0.43
California	Manufactured	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	279	20	$56	100%	60%	$0.02	0.00	0.00
California	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,338	20	$1,000	95%	N/A	$0.04	3	3
California	Manufactured	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	161	45	$415	75%	85%	$0.22	0.14	0.14
California	Manufactured	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	321	40	$23,440	5.0%	100%	$6.17	0.00	0.00
California	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	128	30	$480	25%	90%	$0.31	0.03	0.03
California	Manufactured	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	23	45	$629	20%	65%	$2.25	0.00	0.00
California	Manufactured	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,155	20	$715	0.0%	95%	$0.06	0.00	0.00
California	Manufactured	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	1,048	45	$324	85%	50%	$0.03	0.61	0.61
California	Manufactured	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	150	45	$2,435	95%	60%	$1.37	0.00	0.00
California	Manufactured	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	334	45	$11,037	95%	75%	$2.81	0.00	0.00
California	Manufactured	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	546	45	$10,659	95%	95%	$1.66	0.53	0.53
California	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	39	39
California	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	0.37	0.37
California	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$0.01	30	30
California	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.19	372	372
California	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$0.01	1	1
California	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.19	11	11
California	Manufactured	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	16	5	$0.18	100%	N/A	$0.00	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	23	5	$1	85%	N/A	$0.02	0.82	653
California	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.11	198	371
California	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.94	6	6
California	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.28	16	16
California	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.28	3	3
California	Manufactured	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	New	16	5	$0.18	100%	N/A	$0.00	0.00	0.00
California	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	New	23	5	$1	85%	N/A	$0.02	4	21
California	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	New	26	12	$21	15%	N/A	$0.11	5	9
California	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.94	0.17	0.17
California	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.28	0.45	0.47
California	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.28	0.09	0.09
California	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	96	96
California	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	3	3
California	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	4	4
California	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	0.52	0.52
California	Manufactured	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Manufactured	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	3	3
California	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	96	96
California	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.10	0.10
California	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	2	2
California	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	36	36
California	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	169	20	$633	100%	N/A	$0.37	244	270
California	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Manufactured	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,039	20	$131	4.8%	100%	$0.01	234	234
California	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	169	20	$633	100%	N/A	$0.37	8	8
California	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	142	142
California	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	4	4
California	Manufactured	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	Existing	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	21	21
California	Manufactured	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	New	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	0.38	0.38
California	Manufactured	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	181	20	$120	100%	N/A	$0.07	154	160
California	Manufactured	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	44	20	$60	100%	N/A	$0.13	0.00	0.00
California	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,278	13	$604	100%	N/A	$0.06	330	340
California	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	28	13	$361	100%	N/A	$1.57	0.00	0.00
California	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,278	13	$604	100%	N/A	$0.06	12	7
California	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	28	13	$361	100%	N/A	$1.57	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	180	14	$140	90%	95%	$0.09	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	64	14	$58	90%	95%	$0.11	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	314	14	$210	90%	95%	$0.08	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	234	14	$198	90%	99%	$0.10	0.36	7
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	118	14	$116	90%	99%	$0.12	16	19
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	368	14	$268	90%	99%	$0.09	0.78	18
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	249	14	$152	90%	89%	$0.07	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$70	90%	89%	$0.06	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	43	12	$161	33%	50%	$0.48	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$7	33%	50%	$0.11	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	76	12	$309	33%	85%	$0.52	0.00	0.38
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	41	12	$155	33%	85%	$0.49	2	3
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	34	12	$154	33%	35%	$0.57	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	285	40	$935	29%	90%	$0.28	18	18
California	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	57	10	$4	100%	25%	$0.01	3	3
California	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	50	10	$5	66%	65%	$0.02	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	122	10	$6	66%	95%	$0.01	18	18
California	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	189	10	$46	100%	65%	$0.03	29	29

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California	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	189	10	$34	100%	10%	$0.03	4	4
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.24	0.24
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	3	3
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	0.62	0.62
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	3	3
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	180	14	$140	90%	95%	$0.09	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	64	14	$58	90%	95%	$0.11	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	314	14	$210	90%	95%	$0.08	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	234	14	$198	90%	99%	$0.10	0.00	0.28
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	118	14	$116	90%	99%	$0.12	0.19	0.19
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	368	14	$268	90%	99%	$0.09	0.01	0.61
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	249	14	$152	90%	89%	$0.07	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$70	90%	89%	$0.06	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	43	12	$161	33%	50%	$0.48	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$7	33%	50%	$0.11	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	76	12	$309	33%	85%	$0.52	0.00	0.01
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	41	12	$155	33%	85%	$0.49	0.05	0.05
California	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	34	12	$154	33%	35%	$0.57	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	298	40	$935	59%	90%	$0.27	0.08	0.08
California	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	50	10	$5	66%	65%	$0.02	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	122	10	$6	66%	95%	$0.01	0.40	0.40
California	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	189	10	$46	100%	65%	$0.03	0.64	0.64
California	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	189	10	$34	100%	10%	$0.03	0.09	0.09
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.00	0.00
California	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.01	0.01
California	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,143	13	$1,136	59%	N/A	$0.12	1,815	1,947
California	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	68	13	$72	100%	N/A	$0.13	0.00	14
California	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,143	13	$1,136	59%	N/A	$0.12	68	44
California	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	68	13	$72	100%	N/A	$0.13	0.00	0.48

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	180	14	$140	90%	95%	$0.09	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	64	14	$58	90%	95%	$0.11	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	314	14	$210	90%	95%	$0.08	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	234	14	$198	90%	99%	$0.10	3	90
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	118	14	$116	90%	99%	$0.12	254	274
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	368	14	$268	90%	99%	$0.09	8	216
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	249	14	$152	90%	89%	$0.07	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$70	90%	89%	$0.06	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	43	12	$161	33%	50%	$0.48	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$7	33%	50%	$0.11	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	76	12	$309	33%	85%	$0.52	0.00	4
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	41	12	$155	33%	85%	$0.49	37	41
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	34	12	$154	33%	35%	$0.57	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	279	40	$935	29%	90%	$0.29	269	269
California	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	57	10	$4	100%	25%	$0.01	52	52
California	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	50	10	$5	66%	65%	$0.02	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	122	10	$6	66%	95%	$0.01	279	279
California	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	189	10	$46	100%	65%	$0.03	447	447
California	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	189	10	$34	100%	10%	$0.03	68	68
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	3	3
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	58	58
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	9	9
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	53	53
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	180	14	$140	90%	95%	$0.09	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	64	14	$58	90%	95%	$0.11	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	314	14	$210	90%	95%	$0.08	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	234	14	$198	90%	99%	$0.10	0.08	5
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	118	14	$116	90%	99%	$0.12	3	3
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	368	14	$268	90%	99%	$0.09	0.33	11
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	115	14	$81	90%	89%	$0.08	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	249	14	$152	90%	89%	$0.07	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$70	90%	89%	$0.06	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	115	14	$81	90%	89%	$0.08	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	43	12	$161	33%	50%	$0.48	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$7	33%	50%	$0.11	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	76	12	$309	33%	85%	$0.52	0.00	0.20
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	41	12	$155	33%	85%	$0.49	0.97	0.97
California	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	34	12	$154	33%	35%	$0.57	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	279	40	$935	59%	90%	$0.29	1	1
California	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	50	10	$5	66%	65%	$0.02	0.00	0.00
California	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	122	10	$6	66%	95%	$0.01	7	7
California	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	189	10	$46	100%	65%	$0.03	11	11
California	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	189	10	$34	100%	10%	$0.03	1	1
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.08	0.08
California	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.21	0.21
California	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	29	29
California	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	0.46	0.46
California	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	2	2
California	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	0.08	0.08

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	133	18	$1,585	2.5%	95%	$1.24	0.32	0.32
California	Multifamily	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	10	45	$152	75%	95%	$1.26	0.75	0.75
California	Multifamily	Cool Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	66	45	$675	65%	35%	$0.87	1	1
California	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	253	15	$1,671	100%	N/A	$0.75	0.00	0.00
California	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	163	15	$835	100%	N/A	$0.58	0.00	0.00
California	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	353	15	$2,786	100%	N/A	$0.90	12	16
California	Multifamily	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	128	15	$557	100%	N/A	$0.49	0.00	0.00
California	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	966	15	$-1443.9737	11%	N/A	$-0.17	6	7
California	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	0.06	20	$61	25%	90%	$99.39	0.00	0.00
California	Multifamily	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	39	18	$512	25%	75%	$1.35	0.76	0.76
California	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	54	5	$300	95%	65%	$1.27	3	3
California	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	136	30	$675	5.0%	90%	$0.46	0.60	0.60
California	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	90	11	$895	5.0%	95%	$1.35	0.42	0.42
California	Multifamily	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	42	5	$200	95%	65%	$1.10	2	2
California	Multifamily	Cool Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	121	45	$1,552	75%	25%	$1.09	2	2
California	Multifamily	Cool Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	29	45	$274	5.0%	50%	$0.80	0.06	0.06
California	Multifamily	Cool Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	126	45	$1,552	5.0%	25%	$1.04	0.14	0.14
California	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	199	20	$455	10%	95%	$0.23	1	1
California	Multifamily	Cool Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	256	45	$3,400	65%	25%	$1.13	3	3
California	Multifamily	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	95	45	$1,744	95%	60%	$1.55	0.25	0.25
California	Multifamily	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	131	45	$7,906	95%	75%	$5.12	8	8

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	128	45	$7,634	95%	95%	$5.06	0.00	0.00
California	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	79	18	$1,585	20%	95%	$2.08	0.02	0.02
California	Multifamily	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	7	45	$152	90%	95%	$1.78	0.00	0.00
California	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	165	15	$1,207	100%	N/A	$0.83	0.00	0.00
California	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	106	15	$603	100%	N/A	$0.65	0.00	0.00
California	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	229	15	$2,012	100%	N/A	$1.00	0.25	0.29
California	Multifamily	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	84	15	$402	100%	N/A	$0.54	0.00	0.00
California	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	606	15	$-1015.0921	22%	N/A	$-0.19	0.35	0.37
California	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	0.06	20	$61	25%	90%	$99.39	0.00	0.00
California	Multifamily	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	40	40	$142	75%	50%	$0.30	0.01	0.01
California	Multifamily	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	39	40	$8,805	10%	100%	$19.18	0.00	0.00
California	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	32	5	$300	95%	65%	$2.12	0.04	0.04
California	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	81	30	$480	15%	90%	$0.54	0.00	0.00
California	Multifamily	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$225	20%	65%	$12.71	0.00	0.00
California	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	54	11	$895	10%	95%	$2.26	0.00	0.00
California	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	119	20	$455	10%	95%	$0.38	0.00	0.00
California	Multifamily	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	68	45	$1,744	95%	60%	$2.18	0.00	0.00
California	Multifamily	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	91	45	$7,906	95%	75%	$7.36	0.04	0.04
California	Multifamily	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	85	45	$7,634	95%	95%	$7.61	0.00	0.00
California	Multifamily	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	3	45	$152	75%	95%	$4.02	3	3
California	Multifamily	Cool Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	20	45	$675	65%	35%	$2.77	6	6

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	24	20	$1,166	50%	N/A	$4.67	0.00	0.00
California	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	42	30	$675	5.0%	90%	$1.46	2	2
California	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	34	9	$41	100%	N/A	$0.19	0.00	0.00
California	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	40	9	$308	100%	N/A	$1.16	0.27	3
California	Multifamily	Cool Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	37	45	$1,552	75%	25%	$3.48	10	10
California	Multifamily	Cool Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	9	45	$274	5.0%	50%	$2.55	0.31	0.31
California	Multifamily	Cool Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	39	45	$1,552	5.0%	25%	$3.33	0.69	0.69
California	Multifamily	Cool Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	80	45	$3,400	65%	25%	$3.61	18	18
California	Multifamily	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	29	45	$1,744	95%	60%	$4.96	1	1
California	Multifamily	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	41	45	$7,906	95%	75%	$16.36	39	39
California	Multifamily	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	40	45	$7,634	95%	95%	$16.19	0.00	0.00
California	Multifamily	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	3	45	$152	90%	95%	$3.99	0.04	0.04
California	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	97	20	$960	95%	N/A	$0.98	0.72	0.74
California	Multifamily	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	17	40	$8,805	10%	100%	$43.13	0.00	0.00
California	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	36	30	$480	15%	90%	$1.22	0.06	0.06
California	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	30	9	$41	100%	N/A	$0.21	0.00	0.00
California	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	36	9	$308	100%	N/A	$1.30	0.00	0.00
California	Multifamily	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.67	45	$225	20%	65%	$28.57	0.00	0.00
California	Multifamily	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	30	45	$1,744	95%	60%	$4.89	0.01	0.01
California	Multifamily	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	40	45	$7,906	95%	75%	$16.54	0.35	0.36
California	Multifamily	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	37	45	$7,634	95%	95%	$17.10	0.00	0.00
California	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.59	0.59

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.03	0.03
California	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	5	5
California	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	0.13	0.13
California	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	3	3
California	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.11	0.11
California	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	108	11	$372	100%	N/A	$0.47	7	36
California	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	101	11	$343	100%	N/A	$0.46	0.00	0.00
California	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	26	11	$75	100%	N/A	$0.38	0.00	0.00
California	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	108	11	$372	100%	N/A	$0.47	0.29	1
California	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	101	11	$343	100%	N/A	$0.46	0.00	0.00
California	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	26	11	$75	100%	N/A	$0.38	0.00	0.00
California	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$3	100%	N/A	$0.00	0.00	0.13
California	Multifamily	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	869	20	$131	17%	100%	$0.02	16	16
California	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	111	20	$3	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	742	18	$1,585	2.5%	95%	$0.19	1	1
California	Multifamily	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	23	45	$152	75%	95%	$0.56	1	1
California	Multifamily	Heat Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	143	45	$675	65%	35%	$0.40	3	3
California	Multifamily	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	468	20	$243	100%	80%	$0.05	40	40
California	Multifamily	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	303	20	$112	100%	60%	$0.04	0.00	0.00
California	Multifamily	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	104	18	$512	25%	75%	$0.51	2	2
California	Multifamily	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	31	45	$148	25%	85%	$0.40	0.67	0.67
California	Multifamily	Heat Central	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	782	45	$481	25%	5%	$0.05	0.97	0.97

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	3,770	20	$8,642	5.0%	N/A	$0.23	6	7
California	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	3,492	20	$7,186	0.0%	N/A	$0.20	0.00	0.00
California	Multifamily	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	135	11	$198	75%	50%	$0.20	5	5
California	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	123	30	$675	5.0%	90%	$0.24	0.56	0.56
California	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	420	11	$895	5.0%	95%	$0.24	2	2
California	Multifamily	Heat Central	Tune-up - Furnace (Electric)	Furnace with Tune-up	Furnace with no Tune-up	#N/A	Existing	.	.	$.	100%	N/A	.	0.00	0.00
California	Multifamily	Heat Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,748	45	$1,552	75%	25%	$0.08	33	33
California	Multifamily	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	693	45	$274	5.0%	50%	$0.03	1	1
California	Multifamily	Heat Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,842	45	$1,552	5.0%	25%	$0.07	2	2
California	Multifamily	Heat Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	709	45	$3,400	65%	25%	$0.41	10	10
California	Multifamily	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	57	45	$1,744	95%	60%	$2.60	0.15	0.15
California	Multifamily	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	133	45	$7,906	95%	75%	$5.03	0.00	0.00
California	Multifamily	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	225	45	$7,634	95%	95%	$2.88	18	18
California	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	645	18	$1,585	20%	95%	$0.23	0.25	0.25
California	Multifamily	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	51	45	$152	90%	95%	$0.25	0.06	0.06
California	Multifamily	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	941	45	$2,198	5.0%	95%	$0.20	0.05	0.05
California	Multifamily	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	827	45	$2,236	5.0%	95%	$0.23	0.00	0.00
California	Multifamily	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	893	20	$243	100%	80%	$0.03	0.79	0.79
California	Multifamily	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	580	20	$112	100%	60%	$0.02	0.00	0.00
California	Multifamily	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	218	40	$142	75%	50%	$0.05	0.09	0.09
California	Multifamily	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	49	45	$148	75%	85%	$0.25	0.03	0.03
California	Multifamily	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	268	40	$8,805	10%	100%	$2.47	0.00	0.00
California	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,320	20	$5,330	5.0%	N/A	$0.16	0.08	0.10
California	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,107	20	$4,278	0.0%	N/A	$0.14	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	107	30	$480	15%	90%	$0.23	0.01	0.01
California	Multifamily	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	19	45	$225	20%	65%	$0.90	0.00	0.00
California	Multifamily	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,268	20	$512	0.0%	95%	$0.04	0.00	0.00
California	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	365	11	$895	10%	95%	$0.29	0.08	0.08
California	Multifamily	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	903	45	$274	85%	50%	$0.03	0.43	0.43
California	Multifamily	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	116	45	$1,744	95%	60%	$1.27	0.00	0.00
California	Multifamily	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	257	45	$7,906	95%	75%	$2.61	0.00	0.00
California	Multifamily	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	414	45	$7,634	95%	95%	$1.57	0.32	0.32
California	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	184	18	$1,585	2.5%	95%	$0.89	5	5
California	Multifamily	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	12	45	$152	75%	95%	$1.05	10	10
California	Multifamily	Heat Pump	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	81	45	$675	65%	35%	$0.70	21	21
California	Multifamily	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	151	20	$243	100%	80%	$0.16	138	138
California	Multifamily	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	98	20	$112	100%	60%	$0.11	0.00	0.00
California	Multifamily	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	50	18	$512	25%	75%	$1.05	10	10
California	Multifamily	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	7	45	$148	25%	85%	$1.64	1	1
California	Multifamily	Heat Pump	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	202	45	$481	25%	5%	$0.20	2	2
California	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	277	20	$1,455	100%	N/A	$0.52	0.00	0.00
California	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	188	20	$1,091	100%	N/A	$0.57	0.00	0.00
California	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	411	20	$2,183	100%	N/A	$0.53	54	77
California	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	143	20	$727	100%	N/A	$0.50	0.00	0.00
California	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	479	20	$9,276	13%	N/A	$1.92	9	13
California	Multifamily	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	40	11	$198	75%	50%	$0.67	16	16

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	70	5	$300	95%	65%	$0.99	50	50
California	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	15	30	$675	5.0%	90%	$3.97	0.74	0.74
California	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	192	11	$895	5.0%	95%	$0.63	9	9
California	Multifamily	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	54	5	$200	20%	75%	$0.86	9	9
California	Multifamily	Heat Pump	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	653	45	$1,552	75%	25%	$0.20	129	129
California	Multifamily	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	240	45	$274	5.0%	50%	$0.10	6	6
California	Multifamily	Heat Pump	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	688	45	$1,552	5.0%	25%	$0.19	8	8
California	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	27	20	$455	10%	95%	$1.65	2	2
California	Multifamily	Heat Pump	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	368	45	$3,400	65%	25%	$0.79	60	60
California	Multifamily	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	65	45	$1,744	95%	60%	$2.25	1	1
California	Multifamily	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	109	45	$7,906	95%	75%	$6.14	0.00	0.00
California	Multifamily	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	139	45	$7,634	95%	95%	$4.65	123	123
California	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	173	18	$1,585	20%	95%	$0.95	0.59	0.59
California	Multifamily	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	21	45	$152	90%	95%	$0.62	0.22	0.22
California	Multifamily	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	283	45	$2,198	5.0%	95%	$0.66	0.14	0.14
California	Multifamily	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	244	45	$2,236	5.0%	95%	$0.78	0.00	0.00
California	Multifamily	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	236	20	$243	100%	80%	$0.10	1	1
California	Multifamily	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	153	20	$112	100%	60%	$0.07	0.00	0.00
California	Multifamily	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	90	40	$142	75%	50%	$0.14	0.36	0.36
California	Multifamily	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	10	45	$148	75%	85%	$1.16	0.07	0.07
California	Multifamily	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	112	40	$8,805	10%	100%	$6.76	0.03	0.03
California	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	213	20	$1,051	100%	N/A	$0.49	0.00	0.00
California	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	138	20	$788	100%	N/A	$0.57	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	327	20	$1,577	100%	N/A	$0.48	2	2
California	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	105	20	$525	100%	N/A	$0.49	0.00	0.00
California	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	569	20	$6,805	25%	N/A	$1.19	1	1
California	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	49	5	$300	95%	65%	$1.40	0.89	0.89
California	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	10	30	$480	15%	90%	$4.17	0.01	0.01
California	Multifamily	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	6	45	$225	20%	65%	$2.79	0.00	0.00
California	Multifamily	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	304	20	$512	0.0%	95%	$0.17	0.00	0.00
California	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	153	11	$895	10%	95%	$0.80	0.34	0.34
California	Multifamily	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	274	45	$274	85%	50%	$0.09	1	1
California	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	16	20	$455	10%	95%	$2.73	0.01	0.01
California	Multifamily	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	98	45	$1,744	95%	60%	$1.51	0.02	0.02
California	Multifamily	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	159	45	$7,906	95%	75%	$4.21	0.00	0.00
California	Multifamily	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	197	45	$7,634	95%	95%	$3.29	1	1
California	Multifamily	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	21	45	$152	75%	95%	$0.60	32	32
California	Multifamily	Heat Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	135	45	$675	65%	35%	$0.43	63	63
California	Multifamily	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	440	20	$243	100%	80%	$0.05	724	724
California	Multifamily	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	285	20	$112	100%	60%	$0.04	0.00	0.00
California	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	1,675	20	$1,166	50%	N/A	$0.07	499	614
California	Multifamily	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	29	45	$148	25%	85%	$0.42	12	12
California	Multifamily	Heat Room	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	736	45	$481	25%	5%	$0.06	17	17
California	Multifamily	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	127	11	$198	75%	50%	$0.21	92	92
California	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	116	30	$675	5.0%	90%	$0.25	10	10
California	Multifamily	Heat Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,645	45	$1,552	75%	25%	$0.08	588	588

Table C-2.1. Residential Measure Details

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California	Multifamily	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	652	45	$274	5.0%	50%	$0.04	29	29
California	Multifamily	Heat Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,733	45	$1,552	5.0%	25%	$0.08	39	39
California	Multifamily	Heat Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	667	45	$3,400	65%	25%	$0.43	194	194
California	Multifamily	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	53	45	$1,744	95%	60%	$2.76	2	2
California	Multifamily	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	125	45	$7,906	95%	75%	$5.34	0.00	0.00
California	Multifamily	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	212	45	$7,634	95%	95%	$3.06	337	337
California	Multifamily	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	49	45	$152	90%	95%	$0.26	0.82	0.82
California	Multifamily	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	901	45	$2,198	5.0%	95%	$0.21	0.70	0.70
California	Multifamily	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	791	45	$2,236	5.0%	95%	$0.24	0.00	0.00
California	Multifamily	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	854	20	$243	100%	80%	$0.03	11	11
California	Multifamily	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	555	20	$112	100%	60%	$0.02	0.00	0.00
California	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	1,675	20	$1,000	95%	N/A	$0.06	24	24
California	Multifamily	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	47	45	$148	75%	85%	$0.27	0.50	0.50
California	Multifamily	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	257	40	$8,805	10%	100%	$2.57	0.09	0.09
California	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	102	30	$480	15%	90%	$0.24	0.19	0.19
California	Multifamily	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	18	45	$225	20%	65%	$0.94	0.04	0.04
California	Multifamily	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,214	20	$512	0.0%	95%	$0.04	0.00	0.00
California	Multifamily	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	864	45	$274	85%	50%	$0.03	6	6
California	Multifamily	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	111	45	$1,744	95%	60%	$1.33	0.04	0.04
California	Multifamily	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	246	45	$7,906	95%	75%	$2.73	0.00	0.00
California	Multifamily	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	396	45	$7,634	95%	95%	$1.64	4	4
California	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	25	25
California	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	0.23	0.23
California	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$0.01	16	16
California	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.19	208	208
California	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$0.01	0.81	0.81
California	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.19	6	6

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	16	5	$0.18	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	23	5	$1	85%	N/A	$0.02	0.57	365
California	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.11	111	207
California	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.94	3	3
California	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	5.0%	95%	$3.28	4	4
California	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.28	1	1
California	Multifamily	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	New	16	5	$0.18	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	New	23	5	$1	85%	N/A	$0.02	2	12
California	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	New	26	12	$21	15%	N/A	$0.11	3	5
California	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.94	0.09	0.09
California	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	5.0%	95%	$3.28	0.12	0.13
California	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.28	0.05	0.05
California	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	64	64
California	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	2	2
California	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	2	2
California	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	0.28	0.28
California	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	2	2
California	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	75	75
California	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.07	0.07
California	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	2	2
California	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	27	27

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	169	20	$633	100%	N/A	$0.37	199	209
California	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,039	20	$131	2.1%	100%	$0.01	74	74
California	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	169	20	$633	100%	N/A	$0.37	6	6
California	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	118	118
California	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	3	3
California	Multifamily	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	Existing	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	15	15
California	Multifamily	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	New	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	0.28	0.28
California	Multifamily	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	129	20	$120	100%	N/A	$0.09	18	18
California	Multifamily	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	32	20	$60	100%	N/A	$0.19	0.00	0.00
California	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	884	13	$604	100%	N/A	$0.08	158	167
California	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	19	13	$361	100%	N/A	$2.27	0.00	0.00
California	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	884	13	$604	100%	N/A	$0.08	5	4
California	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	19	13	$361	100%	N/A	$2.27	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	124	14	$140	52%	90%	$0.13	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	44	14	$58	52%	90%	$0.15	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	217	14	$210	52%	90%	$0.11	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	162	14	$198	52%	95%	$0.15	0.09	1
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	81	14	$116	52%	95%	$0.17	4	5
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	254	14	$268	52%	95%	$0.12	0.20	4
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	172	14	$152	52%	85%	$0.10	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	92	14	$70	52%	85%	$0.09	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	30	12	$161	33%	50%	$0.69	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	6	12	$7	33%	50%	$0.16	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	52	12	$309	33%	85%	$0.76	0.00	0.18
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	28	12	$155	33%	85%	$0.70	1	1
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	24	12	$154	33%	35%	$0.82	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	197	40	$935	29%	90%	$0.41	8	8
California	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	39	10	$3	100%	25%	$0.01	1	1
California	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	34	10	$4	50%	65%	$0.02	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	84	10	$5	50%	95%	$0.01	6	6

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	130	10	$39	100%	65%	$0.04	14	14
California	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	130	10	$29	100%	10%	$0.03	2	2
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.20	0.20
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	3	3
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	0.53	0.53
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	3	3
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	124	14	$140	52%	90%	$0.13	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	44	14	$58	52%	90%	$0.15	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	217	14	$210	52%	90%	$0.11	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	162	14	$198	52%	95%	$0.15	0.00	0.07
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	81	14	$116	52%	95%	$0.17	0.05	0.05
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	254	14	$268	52%	95%	$0.12	0.00	0.16
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	172	14	$152	52%	85%	$0.10	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	92	14	$70	52%	85%	$0.09	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	30	12	$161	33%	50%	$0.69	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	6	12	$7	33%	50%	$0.16	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	52	12	$309	33%	85%	$0.76	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	28	12	$155	33%	85%	$0.70	0.02	0.02
California	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	24	12	$154	33%	35%	$0.82	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	206	40	$935	59%	90%	$0.39	0.04	0.04
California	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	34	10	$4	50%	65%	$0.02	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	84	10	$5	50%	95%	$0.01	0.14	0.14
California	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	130	10	$39	100%	65%	$0.04	0.30	0.30
California	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	130	10	$29	100%	10%	$0.03	0.04	0.04
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.00	0.00
California	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.01	0.01
California	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	790	13	$1,136	0.0%	N/A	$0.18	0.00	0.00
California	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	47	13	$72	100%	N/A	$0.19	0.00	18
California	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	790	13	$1,136	0.0%	N/A	$0.18	0.00	0.00
California	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	47	13	$72	100%	N/A	$0.19	0.00	0.70

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	124	14	$140	52%	90%	$0.13	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	44	14	$58	52%	90%	$0.15	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	217	14	$210	52%	90%	$0.11	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	162	14	$198	52%	95%	$0.15	0.49	26
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	81	14	$116	52%	95%	$0.17	90	90
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	254	14	$268	52%	95%	$0.12	1	60
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	172	14	$152	52%	85%	$0.10	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	92	14	$70	52%	85%	$0.09	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	30	12	$161	33%	50%	$0.69	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	6	12	$7	33%	50%	$0.16	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	52	12	$309	33%	85%	$0.76	0.01	2
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	28	12	$155	33%	85%	$0.70	23	23
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	24	12	$154	33%	35%	$0.82	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	193	40	$935	29%	90%	$0.42	171	171
California	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	39	10	$3	100%	25%	$0.01	33	33
California	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	34	10	$4	50%	65%	$0.02	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	84	10	$5	50%	95%	$0.01	134	134
California	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	130	10	$39	100%	65%	$0.04	284	284
California	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	130	10	$29	100%	10%	$0.03	43	43
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	4	4
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	68	68
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	10	10
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	61	61
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	124	14	$140	52%	90%	$0.13	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	44	14	$58	52%	90%	$0.15	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	217	14	$210	52%	90%	$0.11	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	162	14	$198	52%	95%	$0.15	0.03	1
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	81	14	$116	52%	95%	$0.17	1	1
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	254	14	$268	52%	95%	$0.12	0.13	4
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	80	14	$81	52%	85%	$0.12	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	172	14	$152	52%	85%	$0.10	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	92	14	$70	52%	85%	$0.09	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	80	14	$81	52%	85%	$0.12	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	30	12	$161	33%	50%	$0.69	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	6	12	$7	33%	50%	$0.16	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	52	12	$309	33%	85%	$0.76	0.00	0.14
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	28	12	$155	33%	85%	$0.70	0.67	0.67
California	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	24	12	$154	33%	35%	$0.82	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	193	40	$935	59%	90%	$0.42	0.98	0.98
California	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	34	10	$4	50%	65%	$0.02	0.00	0.00
California	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	84	10	$5	50%	95%	$0.01	3	3
California	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	130	10	$39	100%	65%	$0.04	7	7
California	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	130	10	$29	100%	10%	$0.03	1	1
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.10	0.10
California	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.27	0.27
California	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	297	297
California	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	4	4
California	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	16	16
California	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	0.46	0.46

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	193	18	$1,585	13%	95%	$0.85	72	72
California	Single Family	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	18	45	$263	75%	95%	$1.19	41	41
California	Single Family	Cool Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	119	45	$1,164	65%	35%	$0.83	84	84
California	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	367	15	$2,136	100%	N/A	$0.66	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	235	15	$1,068	100%	N/A	$0.52	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	512	15	$3,560	100%	N/A	$0.79	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	185	15	$712	100%	N/A	$0.44	0.00	0.00
California	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,459	15	$-1872.8553	22%	N/A	$-0.15	417	593
California	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	0.10	20	$102	50%	90%	$99.39	0.00	0.00
California	Single Family	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	77	18	$883	25%	75%	$1.19	45	45
California	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	79	5	$300	95%	65%	$0.87	154	154
California	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	198	30	$675	40%	90%	$0.31	209	209
California	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	131	11	$895	25%	95%	$0.93	88	88
California	Single Family	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	61	5	$200	95%	65%	$0.76	118	118
California	Single Family	Cool Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	182	45	$2,038	75%	25%	$0.95	93	93
California	Single Family	Cool Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	49	45	$360	5.0%	50%	$0.63	3	3
California	Single Family	Cool Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	191	45	$2,038	5.0%	25%	$0.91	6	6
California	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	290	20	$455	50%	95%	$0.16	433	433
California	Single Family	Cool Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	456	45	$5,860	65%	25%	$1.09	181	181
California	Single Family	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	175	45	$3,006	95%	60%	$1.45	12	12
California	Single Family	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	242	45	$13,625	95%	75%	$4.78	405	405

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California	Single Family	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	238	45	$13,158	95%	95%	$4.69	0.00	0.00
California	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	103	18	$1,585	45%	95%	$1.59	1	1
California	Single Family	Cool Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	13	45	$263	90%	95%	$1.66	0.22	0.22
California	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	214	15	$1,393	100%	N/A	$0.74	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	138	15	$696	100%	N/A	$0.57	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	298	15	$2,321	100%	N/A	$0.89	0.00	0.00
California	Single Family	Cool Central	Central Air Conditioner - Federal Standard 2015	Federal Standard 2015 Central Air Conditioner - SEER/ EER 14/12.2 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	109	15	$464	100%	N/A	$0.48	0.00	0.00
California	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	820	15	$-1186.6447	44%	N/A	$-0.16	19	21
California	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	0.10	20	$102	50%	90%	$99.39	0.00	0.00
California	Single Family	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	77	40	$245	75%	50%	$0.27	0.50	0.50
California	Single Family	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	51	40	$14,754	10%	100%	$24.65	0.02	0.02
California	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	42	5	$300	95%	65%	$1.63	1	1
California	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	105	30	$480	65%	90%	$0.42	0.95	0.95
California	Single Family	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$388	20%	65%	$24.23	0.00	0.00
California	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	70	11	$895	50%	95%	$1.73	1	1
California	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	155	20	$455	50%	95%	$0.29	1	1
California	Single Family	Cool Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	115	45	$3,006	95%	60%	$2.22	0.04	0.04
California	Single Family	Cool Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	155	45	$13,625	95%	75%	$7.47	1	1
California	Single Family	Cool Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	146	45	$13,158	95%	95%	$7.67	0.00	0.00
California	Single Family	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	4	45	$263	75%	95%	$4.90	12	12
California	Single Family	Cool Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	29	45	$1,164	65%	35%	$3.41	25	25

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	101	20	$1,166	50%	N/A	$1.15	38	61
California	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	48	30	$675	40%	90%	$1.29	65	65
California	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	38	9	$41	100%	N/A	$0.16	0.00	0.00
California	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	45	9	$308	100%	N/A	$1.03	0.91	11
California	Single Family	Cool Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	44	45	$2,038	75%	25%	$3.92	30	30
California	Single Family	Cool Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	11	45	$360	5.0%	50%	$2.58	1	1
California	Single Family	Cool Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	46	45	$2,038	5.0%	25%	$3.74	2	2
California	Single Family	Cool Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	110	45	$5,860	65%	25%	$4.50	64	64
California	Single Family	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	42	45	$3,006	95%	60%	$5.99	4	4
California	Single Family	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	58	45	$13,625	95%	75%	$19.70	144	144
California	Single Family	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	57	45	$13,158	95%	95%	$19.35	0.00	0.00
California	Single Family	Cool Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	5	45	$263	90%	95%	$4.36	0.20	0.20
California	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	89	20	$960	95%	N/A	$1.07	1	1
California	Single Family	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	19	40	$14,754	10%	100%	$64.69	0.02	0.02
California	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	40	30	$480	65%	90%	$1.09	0.92	0.92
California	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	34	9	$41	100%	N/A	$0.19	0.00	0.00
California	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	40	9	$308	100%	N/A	$1.17	0.00	0.00
California	Single Family	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.52	45	$388	20%	65%	$63.59	0.00	0.00
California	Single Family	Cool Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	43	45	$3,006	95%	60%	$5.83	0.04	0.04
California	Single Family	Cool Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	59	45	$13,625	95%	75%	$19.61	1	1
California	Single Family	Cool Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	55	45	$13,158	95%	95%	$20.13	0.00	0.00
California	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	6	6

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.39	0.39
California	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	59	59
California	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	1	1
California	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	30	30
California	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	1	1
California	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	185	11	$372	100%	N/A	$0.27	162	760
California	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	174	11	$343	100%	N/A	$0.27	0.00	0.00
California	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	45	11	$75	100%	N/A	$0.22	0.00	0.00
California	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	185	11	$372	100%	N/A	$0.27	6	30
California	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	174	11	$343	100%	N/A	$0.27	0.00	0.00
California	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	45	11	$75	100%	N/A	$0.22	0.00	0.00
California	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$3	100%	N/A	$0.00	0.00	14
California	Single Family	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	869	20	$131	17%	100%	$0.02	1,858	1,858
California	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	40	20	$6	100%	N/A	$0.02	0.00	0.00
California	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	111	20	$3	100%	N/A	$0.00	0.00	1
California	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,228	18	$1,585	13%	95%	$0.12	167	167
California	Single Family	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	40	45	$263	75%	95%	$0.55	33	33
California	Single Family	Heat Central	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	272	45	$1,164	65%	35%	$0.36	70	70
California	Single Family	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	253	20	$121	100%	80%	$0.05	227	227
California	Single Family	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	166	20	$56	100%	60%	$0.03	0.00	0.00
California	Single Family	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	225	18	$883	25%	75%	$0.41	48	48
California	Single Family	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	54	45	$256	25%	85%	$0.40	12	12
California	Single Family	Heat Central	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,278	45	$830	25%	5%	$0.06	17	17

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	6,253	20	$11,043	50%	N/A	$0.18	1,413	1,643
California	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,835	20	$9,183	0.0%	N/A	$0.16	0.00	0.00
California	Single Family	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	237	11	$341	75%	50%	$0.20	99	99
California	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	204	30	$675	40%	90%	$0.19	79	79
California	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	696	11	$895	25%	95%	$0.16	178	178
California	Single Family	Heat Central	Tune-up - Furnace (Electric)	Furnace with Tune-up	Furnace with no Tune-up	#N/A	Existing	.	.	$.	100%	N/A	.	0.00	0.00
California	Single Family	Heat Central	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,545	45	$2,038	75%	25%	$0.07	512	512
California	Single Family	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	959	45	$360	5.0%	50%	$0.03	24	24
California	Single Family	Heat Central	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,682	45	$2,038	5.0%	25%	$0.06	34	34
California	Single Family	Heat Central	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,329	45	$5,860	65%	25%	$0.38	216	216
California	Single Family	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	104	45	$3,006	95%	60%	$2.46	3	3
California	Single Family	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	249	45	$13,625	95%	75%	$4.65	0.00	0.00
California	Single Family	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	425	45	$13,158	95%	95%	$2.63	376	376
California	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	951	18	$1,585	45%	95%	$0.16	7	7
California	Single Family	Heat Central	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	83	45	$263	90%	95%	$0.27	0.85	0.85
California	Single Family	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	1,302	45	$3,789	25%	95%	$0.25	3	3
California	Single Family	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	1,216	45	$3,854	25%	95%	$0.27	0.00	0.00
California	Single Family	Heat Central	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	465	20	$121	100%	80%	$0.03	3	3
California	Single Family	Heat Central	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	301	20	$56	100%	60%	$0.02	0.00	0.00
California	Single Family	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	439	40	$245	75%	50%	$0.04	1	1
California	Single Family	Heat Central	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	73	45	$256	75%	85%	$0.30	0.48	0.48
California	Single Family	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	396	40	$14,754	10%	100%	$2.99	0.09	0.09
California	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,903	20	$6,150	50%	N/A	$0.12	10	15
California	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,618	20	$4,937	0.0%	N/A	$0.11	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	158	30	$480	65%	90%	$0.20	0.81	0.81
California	Single Family	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	25	45	$388	20%	65%	$1.28	0.03	0.03
California	Single Family	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,936	20	$883	85%	95%	$0.05	13	13
California	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	539	11	$895	50%	95%	$0.21	4	4
California	Single Family	Heat Central	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	1,251	45	$360	85%	50%	$0.02	4	4
California	Single Family	Heat Central	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	209	45	$3,006	95%	60%	$1.22	0.03	0.03
California	Single Family	Heat Central	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	458	45	$13,625	95%	75%	$2.53	0.00	0.00
California	Single Family	Heat Central	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	741	45	$13,158	95%	95%	$1.51	4	4
California	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	326	18	$1,585	13%	95%	$0.51	139	139
California	Single Family	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	23	45	$263	75%	95%	$0.96	59	59
California	Single Family	Heat Pump	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	154	45	$1,164	65%	35%	$0.64	124	124
California	Single Family	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	82	20	$121	100%	80%	$0.15	232	232
California	Single Family	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	53	20	$56	100%	60%	$0.10	0.00	0.00
California	Single Family	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	105	18	$883	25%	75%	$0.87	71	71
California	Single Family	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	12	45	$256	25%	85%	$1.73	9	9
California	Single Family	Heat Pump	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	321	45	$830	25%	5%	$0.22	13	13
California	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	417	20	$1,860	100%	N/A	$0.44	0.00	0.00
California	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	272	20	$1,395	100%	N/A	$0.51	0.00	0.00
California	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	639	20	$2,790	100%	N/A	$0.43	251	355
California	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	212	20	$930	100%	N/A	$0.44	0.00	0.00
California	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	934	20	$11,852	20%	N/A	$1.26	107	149
California	Single Family	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	79	11	$341	75%	50%	$0.58	103	103

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	108	5	$300	95%	65%	$0.64	241	241
California	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	23	30	$675	40%	90%	$2.62	28	28
California	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	314	11	$895	25%	95%	$0.39	252	252
California	Single Family	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	83	5	$200	20%	75%	$0.56	44	44
California	Single Family	Heat Pump	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	956	45	$2,038	75%	25%	$0.18	593	593
California	Single Family	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	343	45	$360	5.0%	50%	$0.09	27	27
California	Single Family	Heat Pump	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,008	45	$2,038	5.0%	25%	$0.17	40	40
California	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	39	20	$455	50%	95%	$1.14	67	67
California	Single Family	Heat Pump	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	690	45	$5,860	65%	25%	$0.72	353	353
California	Single Family	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	122	45	$3,006	95%	60%	$2.08	11	11
California	Single Family	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	206	45	$13,625	95%	75%	$5.63	0.00	0.00
California	Single Family	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	264	45	$13,158	95%	95%	$4.23	735	735
California	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	266	18	$1,585	45%	95%	$0.62	6	6
California	Single Family	Heat Pump	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	36	45	$263	90%	95%	$0.61	1	1
California	Single Family	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	405	45	$3,789	25%	95%	$0.80	3	3
California	Single Family	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	381	45	$3,854	25%	95%	$0.86	0.00	0.00
California	Single Family	Heat Pump	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	128	20	$121	100%	80%	$0.09	3	3
California	Single Family	Heat Pump	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	83	20	$56	100%	60%	$0.07	0.00	0.00
California	Single Family	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	176	40	$245	75%	50%	$0.12	2	2
California	Single Family	Heat Pump	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	15	45	$256	75%	85%	$1.40	0.33	0.33
California	Single Family	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	164	40	$14,754	10%	100%	$7.75	0.13	0.13
California	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	285	20	$1,213	100%	N/A	$0.42	0.00	0.00
California	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	174	20	$909	100%	N/A	$0.52	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	453	20	$1,819	100%	N/A	$0.40	8	6
California	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	141	20	$606	100%	N/A	$0.43	0.00	0.00
California	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	918	20	$7,852	40%	N/A	$0.85	13	11
California	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	68	5	$300	95%	65%	$1.01	3	3
California	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	14	30	$480	65%	90%	$3.06	0.23	0.23
California	Single Family	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	8	45	$388	20%	65%	$3.94	0.03	0.03
California	Single Family	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	528	20	$883	85%	95%	$0.17	11	11
California	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	224	11	$895	50%	95%	$0.54	6	6
California	Single Family	Heat Pump	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	391	45	$360	85%	50%	$0.08	4	4
California	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	21	20	$455	50%	95%	$2.11	0.33	0.33
California	Single Family	Heat Pump	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	176	45	$3,006	95%	60%	$1.45	0.11	0.11
California	Single Family	Heat Pump	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	288	45	$13,625	95%	75%	$4.03	0.00	0.00
California	Single Family	Heat Pump	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	358	45	$13,158	95%	95%	$3.12	7	7
California	Single Family	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	Existing	37	45	$263	75%	95%	$0.60	52	52
California	Single Family	Heat Room	Ceiling Insulation (CA) - Code	R-49 (CA Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	247	45	$1,164	65%	35%	$0.40	110	110
California	Single Family	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	229	20	$121	100%	80%	$0.05	359	359
California	Single Family	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	Existing	150	20	$56	100%	60%	$0.04	0.00	0.00
California	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,887	20	$1,166	50%	N/A	$0.04	829	972
California	Single Family	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	Existing	49	45	$256	25%	85%	$0.44	19	19
California	Single Family	Heat Room	Floor Insulation (CA) - Code	R-30 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,161	45	$830	25%	5%	$0.06	27	27
California	Single Family	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	215	11	$341	75%	50%	$0.22	154	154
California	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	186	30	$675	40%	90%	$0.20	126	126
California	Single Family	Heat Room	Wall Insulation 2x4 (CA) - Below Code	R-13 (Below CA Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,313	45	$2,038	75%	25%	$0.08	815	815

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	Existing	872	45	$360	5.0%	50%	$0.04	39	39
California	Single Family	Heat Room	Wall Insulation 2x6 (CA) - Code	R-13 (CA Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,438	45	$2,038	5.0%	25%	$0.07	54	54
California	Single Family	Heat Room	Window (CA) - Code	U-value 0.38 Window (CA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,208	45	$5,860	65%	25%	$0.41	349	349
California	Single Family	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	94	45	$3,006	95%	60%	$2.70	4	4
California	Single Family	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	226	45	$13,625	95%	75%	$5.12	0.00	0.00
California	Single Family	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	Existing	386	45	$13,158	95%	95%	$2.90	608	608
California	Single Family	Heat Room	Ceiling Insulation (CA) - Above Code	R-60 (Above CA Code)	R-49 (CA Code)	Savings Per Building	New	78	45	$263	90%	95%	$0.29	1	1
California	Single Family	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	1,225	45	$3,789	25%	95%	$0.26	4	4
California	Single Family	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	1,145	45	$3,854	25%	95%	$0.29	0.00	0.00
California	Single Family	Heat Room	Door (CA) - Above Code	R-10 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	438	20	$121	100%	80%	$0.03	4	4
California	Single Family	Heat Room	Door (CA) - Above Code	R-5 Door (Above CA Code)	R-2.6 Door (CA Code)	Savings Per Building	New	283	20	$56	100%	60%	$0.02	0.00	0.00
California	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,887	20	$1,000	95%	N/A	$0.03	32	34
California	Single Family	Heat Room	Floor Insulation (CA) - Above Code	R-38 (Above CA Code)	R-30 (CA Code)	Savings Per Building	New	69	45	$256	75%	85%	$0.31	0.68	0.68
California	Single Family	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	373	40	$14,754	10%	100%	$3.16	0.13	0.13
California	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	149	30	$480	65%	90%	$0.21	1	1
California	Single Family	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	23	45	$388	20%	65%	$1.36	0.04	0.04
California	Single Family	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,823	20	$883	85%	95%	$0.05	18	18
California	Single Family	Heat Room	Wall Insulation 2x6 (CA) - Above Code	R-21 (Above CA Code)	R-13 (CA Code)	Savings Per Building	New	1,177	45	$360	85%	50%	$0.03	6	6
California	Single Family	Heat Room	Window (CA) - Tier 1 Above Code	U-value 0.30 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	197	45	$3,006	95%	60%	$1.30	0.05	0.05
California	Single Family	Heat Room	Window (CA) - Tier 2 Above Code	U-value 0.25 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	431	45	$13,625	95%	75%	$2.69	0.00	0.00
California	Single Family	Heat Room	Window (CA) - Tier 3 Above Code	U-value 0.22 Window (Above CA Code)	U-value 0.38 Window (CA Code)	Savings Per Building	New	698	45	$13,158	95%	95%	$1.60	5	5
California	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	167	167
California	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	1	1
California	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$0.01	155	155
California	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.19	1,930	1,930
California	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$0.01	7	7
California	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.19	57	57

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	16	5	$0.18	100%	N/A	$0.00	0.00	0.00
California	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	23	5	$1	85%	N/A	$0.02	4	3,385
California	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.11	1,028	1,921
California	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.94	31	31
California	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.28	83	83
California	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.28	16	16
California	Single Family	Lighting Standard	Lighting General Service Lamp - CA Code 2019	CA Code 2019 General Service Lamp - Incandescent	Lighting General Service Lamp - CA Code 2013	Per Installation	New	16	5	$0.18	100%	N/A	$0.00	0.00	0.00
California	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - CA Code 2013	Per Installation	New	23	5	$1	85%	N/A	$0.02	21	113
California	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - CA Code 2013	Per Installation	New	26	12	$21	15%	N/A	$0.11	29	47
California	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.94	0.88	0.91
California	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.28	2	2
California	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.28	0.47	0.48
California	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	387	387
California	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	15	15
California	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	21	21
California	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	2	2
California	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	14	14
California	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	404	404
California	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.43	0.43
California	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	12	12
California	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	Existing	440	10	$175	40%	N/A	$0.06	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	Existing	1,170	10	$750	75%	N/A	$0.09	42	42
California	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	New	440	10	$175	40%	N/A	$0.06	0.00	0.00
California	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	New	1,170	10	$750	75%	N/A	$0.09	1	1
California	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	210	210
California	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	169	20	$633	100%	N/A	$0.37	975	1,144
California	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,039	20	$131	7.4%	100%	$0.01	1,579	1,579
California	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	151	20	$472	100%	N/A	$0.31	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	169	20	$633	100%	N/A	$0.37	37	38
California	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	133	20	$37	100%	N/A	$0.03	0.00	0.00
California	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	42	20	$16	100%	N/A	$0.04	0.00	0.00
California	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	623	623
California	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	18	18
California	Single Family	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	Existing	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	107	107
California	Single Family	TV	TV - CA Code 2013	CA Code 2013 TV	Standard TV	Per Installation	New	82	5	$145	100%	N/A	$0.41	0.00	0.00
California	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	1	1
California	Single Family	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	223	20	$120	100%	N/A	$0.05	453	468
California	Single Family	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	55	20	$60	100%	N/A	$0.11	0.00	0.00
California	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,522	13	$604	100%	N/A	$0.05	1,484	1,533
California	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	33	13	$361	100%	N/A	$1.32	0.00	0.00
California	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,522	13	$604	100%	N/A	$0.05	53	34
California	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	33	13	$361	100%	N/A	$1.32	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	214	14	$140	97%	85%	$0.08	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	76	14	$58	97%	85%	$0.09	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	374	14	$210	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	278	14	$198	97%	95%	$0.08	1	34
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	141	14	$116	97%	95%	$0.10	78	92
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	438	14	$268	97%	95%	$0.07	3	85
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$81	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	297	14	$152	97%	85%	$0.06	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	159	14	$70	97%	86%	$0.05	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$81	97%	86%	$0.07	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$161	68%	48%	$0.40	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	68%	48%	$0.09	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	90	12	$309	68%	85%	$0.44	0.00	3
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	49	12	$155	68%	85%	$0.41	22	28
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	41	12	$154	68%	35%	$0.48	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	340	40	$935	29%	90%	$0.24	83	83
California	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	68	10	$5	100%	25%	$0.01	15	15
California	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	60	10	$7	75%	65%	$0.02	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	145	10	$8	75%	95%	$0.01	95	95
California	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	225	10	$59	100%	65%	$0.04	134	134
California	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	225	10	$44	100%	10%	$0.03	20	20
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.86	0.86
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	14	14
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	2	2
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	12	12
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	214	14	$140	97%	85%	$0.08	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	76	14	$58	97%	85%	$0.09	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	374	14	$210	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	278	14	$198	97%	95%	$0.08	0.02	1
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	141	14	$116	97%	95%	$0.10	0.88	0.88
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	438	14	$268	97%	95%	$0.07	0.08	2
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$81	97%	85%	$0.07	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	297	14	$152	97%	85%	$0.06	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	159	14	$70	97%	86%	$0.05	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$81	97%	86%	$0.07	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$161	68%	48%	$0.40	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	68%	48%	$0.09	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	90	12	$309	68%	85%	$0.44	0.00	0.10
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	49	12	$155	68%	85%	$0.41	0.50	0.50
California	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	41	12	$154	68%	35%	$0.48	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	355	40	$935	59%	90%	$0.23	0.38	0.38
California	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	60	10	$7	75%	65%	$0.02	0.00	0.00
California	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	145	10	$8	75%	95%	$0.01	2	2
California	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	225	10	$59	100%	65%	$0.04	2	2
California	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	225	10	$44	100%	10%	$0.03	0.44	0.44
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.01	0.01
California	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.04	0.04
California	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,361	13	$1,136	59%	N/A	$0.10	8,116	8,763
California	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	81	13	$72	100%	N/A	$0.11	0.00	64

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California	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,361	13	$1,136	59%	N/A	$0.10	307	193
California	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	81	13	$72	100%	N/A	$0.11	0.00	2
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	214	14	$140	97%	85%	$0.08	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	76	14	$58	97%	85%	$0.09	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	374	14	$210	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	278	14	$198	97%	95%	$0.08	15	423
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	141	14	$116	97%	95%	$0.10	1,188	1,282
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	438	14	$268	97%	95%	$0.07	38	1,012
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$81	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	297	14	$152	97%	85%	$0.06	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	159	14	$70	97%	86%	$0.05	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$81	97%	86%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$161	68%	48%	$0.40	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	68%	48%	$0.09	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	90	12	$309	68%	85%	$0.44	0.01	41

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	49	12	$155	68%	85%	$0.41	342	380
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	41	12	$154	68%	35%	$0.48	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	333	40	$935	29%	90%	$0.24	1,221	1,221
California	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	68	10	$5	100%	25%	$0.01	237	237
California	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	60	10	$7	75%	65%	$0.02	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	145	10	$8	75%	95%	$0.01	1,440	1,440
California	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	225	10	$59	100%	65%	$0.04	2,027	2,027
California	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	225	10	$44	100%	10%	$0.03	311	311
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	12	12
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	210	210
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	33	33
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	191	191
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	214	14	$140	97%	85%	$0.08	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	76	14	$58	97%	85%	$0.09	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	374	14	$210	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	278	14	$198	97%	95%	$0.08	0.40	23
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	141	14	$116	97%	95%	$0.10	15	15

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	438	14	$268	97%	95%	$0.07	1	51
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$81	97%	85%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	297	14	$152	97%	85%	$0.06	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	159	14	$70	97%	86%	$0.05	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$81	97%	86%	$0.07	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$161	68%	48%	$0.40	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	68%	48%	$0.09	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	90	12	$309	68%	85%	$0.44	0.08	1
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	49	12	$155	68%	85%	$0.41	9	9
California	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	41	12	$154	68%	35%	$0.48	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	332	40	$935	59%	90%	$0.24	6	6
California	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	60	10	$7	75%	65%	$0.02	0.00	0.00
California	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	145	10	$8	75%	95%	$0.01	36	36
California	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	225	10	$59	100%	65%	$0.04	51	51
California	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	225	10	$44	100%	10%	$0.03	7	7
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.28	0.28
California	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.75	0.75

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	52	52
Idaho	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	10	10
Idaho	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	3	3
Idaho	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	2	2
Idaho	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	36	18	$1,585	2.5%	95%	$0.12	0.94	0.94
Idaho	Manufactured	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	9	45	$422	40%	95%	$0.34	3	3
Idaho	Manufactured	Cool Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	49	45	$1,869	75%	35%	$0.24	13	13
Idaho	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	216	15	$1,160	100%	N/A	$0.61	0.00	0.00
Idaho	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	137	15	$580	100%	N/A	$0.48	0.00	0.00
Idaho	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	304	15	$1,934	100%	N/A	$0.72	0.00	0.00
Idaho	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,023	15	$-1329.6053	85%	N/A	$-0.15	71	78
Idaho	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,002	15	$-972.204	43%	N/A	$-0.11	58	64
Idaho	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	11	20	$161	25%	95%	$1.42	0.00	0.00
Idaho	Manufactured	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	14	18	$709	25%	75%	$4.96	3	3
Idaho	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	15	5	$300	95%	65%	$4.58	10	10
Idaho	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	37	30	$675	10%	90%	$0.29	3	3
Idaho	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	25	11	$895	10%	95%	$0.17	2	2
Idaho	Manufactured	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	11	5	$200	95%	65%	$3.99	7	7
Idaho	Manufactured	Cool Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	30	45	$1,826	75%	25%	$0.07	5	5
Idaho	Manufactured	Cool Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	43	45	$2,084	5.0%	50%	$0.04	1	1
Idaho	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	55	20	$455	50%	95%	$0.82	28	28

Table C-2.1. Residential Measure Details

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Idaho	Manufactured	Cool Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	109	45	$5,564	65%	25%	$0.48	15	15
Idaho	Manufactured	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	6	45	$1,550	65%	25%	$1.03	0.00	0.00
Idaho	Manufactured	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	20	45	$10,073	95%	75%	$3.79	11	11
Idaho	Manufactured	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	19	45	$9,698	95%	95%	$2.63	0.00	0.00
Idaho	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	19	18	$1,585	20%	95%	$0.31	1	1
Idaho	Manufactured	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	4	45	$422	60%	95%	$0.23	0.62	0.62
Idaho	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	121	15	$1,300	100%	N/A	$1.22	0.00	0.00
Idaho	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	76	15	$650	100%	N/A	$0.97	0.00	0.00
Idaho	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	170	15	$2,167	100%	N/A	$1.45	0.00	0.00
Idaho	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	538	15	$-1501.1579	85%	N/A	$-0.32	27	27
Idaho	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	515	15	$-1100.8685	85%	N/A	$-0.24	16	16
Idaho	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	11	20	$161	25%	95%	$1.42	0.00	0.00
Idaho	Manufactured	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	10	40	$197	75%	75%	$0.02	1	1
Idaho	Manufactured	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	9	40	$23,229	5.0%	100%	$10.19	0.06	0.06
Idaho	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	7	5	$300	95%	65%	$8.80	1	1
Idaho	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	19	30	$480	25%	90%	$0.43	0.97	0.97
Idaho	Manufactured	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.77	45	$623	20%	65%	$3.46	0.02	0.02
Idaho	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	13	11	$895	20%	95%	$0.41	0.75	0.75
Idaho	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	28	20	$455	50%	95%	$1.57	3	3
Idaho	Manufactured	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1	45	$1,550	95%	60%	$0.72	0.00	0.00
Idaho	Manufactured	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	8	45	$10,073	95%	75%	$2.61	1	1

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	4	45	$9,698	95%	95%	$1.81	0.00	0.00
Idaho	Manufactured	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	12	45	$422	40%	95%	$0.34	8	8
Idaho	Manufactured	Cool Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	68	45	$1,869	75%	35%	$0.24	31	31
Idaho	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	122	20	$1,166	50%	N/A	$0.77	33	40
Idaho	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	52	30	$675	10%	90%	$0.28	7	7
Idaho	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	41	9	$41	100%	N/A	$0.15	0.00	0.00
Idaho	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	49	9	$308	100%	N/A	$0.95	0.46	5
Idaho	Manufactured	Cool Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	42	45	$1,826	75%	25%	$0.09	13	13
Idaho	Manufactured	Cool Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	60	45	$2,084	5.0%	50%	$0.06	2	2
Idaho	Manufactured	Cool Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	152	45	$5,564	65%	25%	$0.47	40	40
Idaho	Manufactured	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	8	45	$1,550	65%	25%	$1.02	0.00	0.00
Idaho	Manufactured	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	27	45	$10,073	95%	75%	$3.68	30	30
Idaho	Manufactured	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	26	45	$9,698	95%	95%	$2.58	0.00	0.00
Idaho	Manufactured	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	5	45	$422	60%	95%	$0.23	1	1
Idaho	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	39	20	$960	95%	N/A	$2.39	6	6
Idaho	Manufactured	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	12	40	$23,229	5.0%	100%	$10.05	0.15	0.15
Idaho	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	25	30	$480	25%	90%	$0.42	2	2
Idaho	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	21	9	$41	100%	N/A	$0.29	0.00	0.00
Idaho	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	25	9	$308	100%	N/A	$1.84	0.00	0.00
Idaho	Manufactured	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$623	20%	65%	$3.42	0.06	0.06
Idaho	Manufactured	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1	45	$1,550	95%	60%	$0.72	0.00	0.00
Idaho	Manufactured	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	10	45	$10,073	95%	75%	$2.60	3	3

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	6	45	$9,698	95%	95%	$1.81	0.00	0.00
Idaho	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	1	1
Idaho	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.78	0.78
Idaho	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	16	16
Idaho	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	5	5
Idaho	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.07	0.00	0.00
Idaho	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.07	0.00	0.00
Idaho	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	217	11	$372	100%	N/A	$0.23	47	224
Idaho	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	205	11	$343	100%	N/A	$0.23	0.00	0.00
Idaho	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	53	11	$75	100%	N/A	$0.19	0.00	0.00
Idaho	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	217	11	$372	100%	N/A	$0.23	25	67
Idaho	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	205	11	$343	100%	N/A	$0.23	0.00	0.00
Idaho	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	53	11	$75	100%	N/A	$0.19	0.00	0.00
Idaho	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	108	20	$3	100%	N/A	$0.00	0.00	4
Idaho	Manufactured	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	1,040	20	$125	17%	100%	$0.01	641	641
Idaho	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	108	20	$3	100%	N/A	$0.00	0.00	1
Idaho	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	2,109	18	$1,585	2.5%	95%	$0.08	117	117
Idaho	Manufactured	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	201	45	$422	40%	95%	$0.18	179	179
Idaho	Manufactured	Heat Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	1,169	45	$1,869	75%	35%	$0.13	714	714
Idaho	Manufactured	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	341	20	$121	100%	80%	$0.04	624	624
Idaho	Manufactured	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	202	20	$56	100%	60%	$0.03	0.00	0.00
Idaho	Manufactured	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	469	18	$709	25%	75%	$0.16	206	206

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	184	45	$411	25%	85%	$0.19	87	87
Idaho	Manufactured	Heat Central	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,767	45	$1,332	25%	5%	$0.03	104	104
Idaho	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	9,336	20	$6,001	50%	N/A	$0.06	4,000	4,500
Idaho	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	8,868	20	$4,990	0.0%	N/A	$0.06	0.00	0.00
Idaho	Manufactured	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	310	11	$274	75%	50%	$0.12	259	259
Idaho	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	351	30	$675	10%	90%	$0.17	70	70
Idaho	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,195	11	$895	10%	95%	$0.10	250	250
Idaho	Manufactured	Heat Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	2,577	45	$1,826	75%	25%	$0.06	1,062	1,062
Idaho	Manufactured	Heat Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,742	45	$2,084	5.0%	50%	$0.05	200	200
Idaho	Manufactured	Heat Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,905	45	$5,564	65%	25%	$0.24	657	657
Idaho	Manufactured	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	286	45	$1,550	65%	25%	$0.46	0.00	0.00
Idaho	Manufactured	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	505	45	$10,073	95%	75%	$1.68	0.00	0.00
Idaho	Manufactured	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	718	45	$9,698	95%	95%	$1.14	1,351	1,351
Idaho	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,121	18	$1,585	20%	95%	$0.15	125	125
Idaho	Manufactured	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	318	45	$422	60%	95%	$0.11	92	92
Idaho	Manufactured	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	593	20	$121	100%	80%	$0.02	225	225
Idaho	Manufactured	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	345	20	$56	100%	60%	$0.02	0.00	0.00
Idaho	Manufactured	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	691	40	$197	75%	75%	$0.02	193	193
Idaho	Manufactured	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	239	45	$411	75%	85%	$0.15	68	68
Idaho	Manufactured	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	467	40	$23,229	5.0%	100%	$4.28	5	5
Idaho	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,985	20	$5,740	50%	N/A	$0.11	1,224	1,229
Idaho	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,715	20	$4,608	0.0%	N/A	$0.10	0.00	0.00
Idaho	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	186	30	$480	25%	90%	$0.23	17	17

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	35	45	$623	20%	65%	$1.47	2	2
Idaho	Manufactured	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,733	20	$709	0.0%	95%	$0.04	0.00	0.00
Idaho	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	635	11	$895	20%	95%	$0.19	73	73
Idaho	Manufactured	Heat Central	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	556	45	$1,101	50%	95%	$0.17	115	115
Idaho	Manufactured	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	430	45	$1,550	95%	60%	$0.31	0.00	0.00
Idaho	Manufactured	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	784	45	$10,073	95%	75%	$1.09	0.00	0.00
Idaho	Manufactured	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,100	45	$9,698	95%	95%	$0.75	401	401
Idaho	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	928	18	$1,585	2.5%	95%	$0.18	0.00	0.00
Idaho	Manufactured	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	118	45	$422	40%	95%	$0.30	0.00	0.00
Idaho	Manufactured	Heat Pump	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	687	45	$1,869	75%	35%	$0.23	0.00	0.00
Idaho	Manufactured	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	155	20	$121	100%	80%	$0.08	0.00	0.00
Idaho	Manufactured	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	91	20	$56	100%	60%	$0.06	0.00	0.00
Idaho	Manufactured	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	311	18	$709	25%	75%	$0.24	0.00	0.00
Idaho	Manufactured	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	57	45	$411	25%	85%	$0.61	0.00	0.00
Idaho	Manufactured	Heat Pump	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,358	45	$1,332	25%	5%	$0.08	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	468	20	$1,011	100%	N/A	$0.21	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	166	20	$758	100%	N/A	$0.45	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	925	20	$1,516	100%	N/A	$0.16	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	250	20	$505	100%	N/A	$0.20	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	3,724	20	$6,441	2.5%	N/A	$0.17	0.00	0.00
Idaho	Manufactured	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	141	11	$274	75%	50%	$0.26	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	144	5	$300	95%	65%	$0.48	0.00	0.00
Idaho	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	26	30	$675	10%	90%	$2.33	0.00	0.00
Idaho	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	622	11	$895	10%	95%	$0.20	0.00	0.00
Idaho	Manufactured	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	110	5	$200	20%	75%	$0.42	0.00	0.00
Idaho	Manufactured	Heat Pump	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	1,243	45	$1,826	75%	25%	$0.12	0.00	0.00
Idaho	Manufactured	Heat Pump	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	1,802	45	$2,084	5.0%	50%	$0.10	0.00	0.00
Idaho	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	22	20	$455	50%	95%	$1.98	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,137	45	$5,564	65%	25%	$0.42	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	143	45	$1,550	65%	25%	$0.92	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	273	45	$10,073	95%	75%	$3.13	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	367	45	$9,698	95%	95%	$2.24	0.00	0.00
Idaho	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	464	18	$1,585	20%	95%	$0.36	0.00	0.00
Idaho	Manufactured	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	146	45	$422	60%	95%	$0.24	0.00	0.00
Idaho	Manufactured	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	215	20	$121	100%	80%	$0.06	0.00	0.00
Idaho	Manufactured	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	125	20	$56	100%	60%	$0.04	0.00	0.00
Idaho	Manufactured	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	400	40	$197	75%	75%	$0.04	0.00	0.00
Idaho	Manufactured	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	71	45	$411	75%	85%	$0.49	0.00	0.00
Idaho	Manufactured	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	230	40	$23,229	5.0%	100%	$8.72	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	269	20	$1,132	100%	N/A	$0.42	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	109	20	$849	100%	N/A	$0.77	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	511	20	$1,698	100%	N/A	$0.33	0.00	0.00
Idaho	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	147	20	$566	100%	N/A	$0.38	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	1,953	20	$7,328	5.0%	N/A	$0.37	0.00	0.00
Idaho	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	73	5	$300	95%	65%	$0.94	0.00	0.00
Idaho	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	13	30	$480	25%	90%	$3.23	0.00	0.00
Idaho	Manufactured	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	18	45	$623	20%	65%	$2.89	0.00	0.00
Idaho	Manufactured	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	642	20	$709	0.0%	95%	$0.11	0.00	0.00
Idaho	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	313	11	$895	20%	95%	$0.39	0.00	0.00
Idaho	Manufactured	Heat Pump	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	218	45	$1,101	50%	95%	$0.43	0.00	0.00
Idaho	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	12	20	$455	50%	95%	$3.71	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	174	45	$1,550	95%	60%	$0.76	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	344	45	$10,073	95%	75%	$2.49	0.00	0.00
Idaho	Manufactured	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	456	45	$9,698	95%	95%	$1.81	0.00	0.00
Idaho	Manufactured	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	181	45	$422	40%	95%	$0.20	18	18
Idaho	Manufactured	Heat Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	1,050	45	$1,869	75%	35%	$0.15	73	73
Idaho	Manufactured	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	306	20	$121	100%	80%	$0.04	64	64
Idaho	Manufactured	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	181	20	$56	100%	60%	$0.03	0.00	0.00
Idaho	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	3,533	20	$1,166	50%	N/A	$0.03	156	175
Idaho	Manufactured	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	165	45	$411	25%	85%	$0.21	9	9
Idaho	Manufactured	Heat Room	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,384	45	$1,332	25%	5%	$0.03	10	10
Idaho	Manufactured	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	278	11	$274	75%	50%	$0.13	26	26
Idaho	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	315	30	$675	10%	90%	$0.19	7	7
Idaho	Manufactured	Heat Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	2,315	45	$1,826	75%	25%	$0.07	110	110
Idaho	Manufactured	Heat Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,361	45	$2,084	5.0%	50%	$0.05	20	20
Idaho	Manufactured	Heat Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,711	45	$5,564	65%	25%	$0.27	68	68
Idaho	Manufactured	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	257	45	$1,550	65%	25%	$0.51	0.00	0.00
Idaho	Manufactured	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	454	45	$10,073	95%	75%	$1.87	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	645	45	$9,698	95%	95%	$1.27	141	141
Idaho	Manufactured	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	294	45	$422	60%	95%	$0.12	7	7
Idaho	Manufactured	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	549	20	$121	100%	80%	$0.02	18	18
Idaho	Manufactured	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	320	20	$56	100%	60%	$0.02	0.00	0.00
Idaho	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	3,533	20	$1,000	95%	N/A	$0.03	183	184
Idaho	Manufactured	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	221	45	$411	75%	85%	$0.16	5	5
Idaho	Manufactured	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	432	40	$23,229	5.0%	100%	$4.62	0.48	0.48
Idaho	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	173	30	$480	25%	90%	$0.25	1	1
Idaho	Manufactured	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	33	45	$623	20%	65%	$1.59	0.17	0.17
Idaho	Manufactured	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,605	20	$709	0.0%	95%	$0.04	0.00	0.00
Idaho	Manufactured	Heat Room	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	515	45	$1,101	50%	95%	$0.18	9	9
Idaho	Manufactured	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	398	45	$1,550	95%	60%	$0.33	0.00	0.00
Idaho	Manufactured	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	726	45	$10,073	95%	75%	$1.18	0.00	0.00
Idaho	Manufactured	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,018	45	$9,698	95%	95%	$0.81	34	34
Idaho	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	42	42
Idaho	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	4	4
Idaho	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	21	7	$1	45%	N/A	$-0.04	36	36
Idaho	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	388	388
Idaho	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	21	7	$1	45%	N/A	$-0.04	18	18
Idaho	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	140	140
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	85%	N/A	$-0.01	0.00	1,024
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	0.00	459

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.97	6	6
Idaho	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.33	16	16
Idaho	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.33	3	3
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	85%	N/A	$-0.01	0.00	157
Idaho	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	27	86
Idaho	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.97	2	2
Idaho	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.33	5	5
Idaho	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.33	1	1
Idaho	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	102	102
Idaho	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	51	51
Idaho	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	4	4
Idaho	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	6	6
Idaho	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	3	3
Idaho	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	103	103
Idaho	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	1	1
Idaho	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	38	38
Idaho	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	44	44
Idaho	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.01	0.01
Idaho	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	164	20	$633	100%	N/A	$0.38	257	273

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Manufactured	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,190	20	$125	2.3%	100%	$0.01	129	129
Idaho	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	164	20	$633	100%	N/A	$0.38	187	188
Idaho	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	80	80
Idaho	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	29	29
Idaho	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	77	77
Idaho	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	17	17
Idaho	Manufactured	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	285	20	$120	100%	N/A	$0.04	373	385
Idaho	Manufactured	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	65	20	$60	100%	N/A	$0.09	0.00	0.00
Idaho	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,960	13	$604	100%	N/A	$0.05	341	370
Idaho	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	43	13	$361	100%	N/A	$1.59	0.00	0.00
Idaho	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,960	13	$604	100%	N/A	$0.05	151	144
Idaho	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	43	13	$361	100%	N/A	$1.59	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	239	14	$140	90%	90%	$-0.10	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	85	14	$58	90%	90%	$-0.38	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	417	14	$210	90%	90%	$-0.04	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	310	14	$198	90%	95%	$-0.06	0.31	6

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	157	14	$116	90%	95%	$-0.17	14	16
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	488	14	$268	90%	95%	$-0.02	0.67	15
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	331	14	$152	90%	85%	$-0.07	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	177	14	$70	90%	85%	$-0.18	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	59	12	$161	33%	50%	$0.32	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	11	12	$7	33%	50%	$0.04	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	104	12	$309	33%	85%	$0.37	0.00	0.35
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	56	12	$155	33%	85%	$0.36	2	2
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	47	12	$154	33%	35%	$0.40	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	438	40	$935	29%	90%	$0.18	19	19
Idaho	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	108	10	$5	100%	25%	$-0.04	4	4
Idaho	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	94	10	$7	66%	65%	$-0.03	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	229	10	$8	66%	95%	$-0.04	23	23
Idaho	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	302	10	$50	100%	65%	$-0.00	32	32
Idaho	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	302	10	$37	100%	10%	$-0.01	4	4

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.17	0.17
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	2	2
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	0.45	0.45
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	2	2
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	239	14	$140	90%	90%	$-0.10	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	85	14	$58	90%	90%	$-0.38	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	417	14	$210	90%	90%	$-0.04	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	310	14	$198	90%	95%	$-0.06	0.02	1
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	157	14	$116	90%	95%	$-0.17	4	4
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	488	14	$268	90%	95%	$-0.02	0.09	3
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	331	14	$152	90%	85%	$-0.07	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	177	14	$70	90%	85%	$-0.18	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	153	14	$81	90%	85%	$-0.20	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	59	12	$161	33%	50%	$0.32	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	11	12	$7	33%	50%	$0.04	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	104	12	$309	33%	85%	$0.37	0.00	0.06
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	56	12	$155	33%	85%	$0.36	0.66	0.66
Idaho	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	47	12	$154	33%	35%	$0.40	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	457	40	$935	59%	90%	$0.18	4	4
Idaho	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	94	10	$7	66%	65%	$-0.03	0.00	0.00
Idaho	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	229	10	$8	66%	95%	$-0.04	6	6
Idaho	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	302	10	$50	100%	65%	$-0.00	8	8
Idaho	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	302	10	$37	100%	10%	$-0.01	1	1
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.04	0.04
Idaho	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.11	0.11
Idaho	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,752	13	$1,136	59%	N/A	$0.09	1,864	2,093
Idaho	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	105	13	$72	100%	N/A	$0.08	0.00	12
Idaho	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,752	13	$1,136	59%	N/A	$0.09	871	829
Idaho	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	105	13	$72	100%	N/A	$0.08	0.00	3
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	239	14	$140	90%	90%	$-0.10	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	85	14	$58	90%	90%	$-0.38	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	417	14	$210	90%	90%	$-0.04	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	310	14	$198	90%	95%	$-0.06	2	78
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	157	14	$116	90%	95%	$-0.17	218	236
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	488	14	$268	90%	95%	$-0.02	7	188
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	331	14	$152	90%	85%	$-0.07	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	177	14	$70	90%	85%	$-0.18	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	59	12	$161	33%	50%	$0.32	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	11	12	$7	33%	50%	$0.04	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	104	12	$309	33%	85%	$0.37	0.00	4
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	56	12	$155	33%	85%	$0.36	34	38
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	47	12	$154	33%	35%	$0.40	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	427	40	$935	29%	90%	$0.19	279	279
Idaho	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	108	10	$5	100%	25%	$-0.04	66	66

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Idaho	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	94	10	$7	66%	65%	$-0.03	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	229	10	$8	66%	95%	$-0.04	356	356
Idaho	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	302	10	$50	100%	65%	$-0.00	486	486
Idaho	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	302	10	$37	100%	10%	$-0.01	74	74
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	2	2
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	42	42
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	6	6
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	39	39
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	239	14	$140	90%	90%	$-0.10	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	85	14	$58	90%	90%	$-0.38	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	417	14	$210	90%	90%	$-0.04	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	310	14	$198	90%	95%	$-0.06	0.45	26
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	157	14	$116	90%	95%	$-0.17	71	71
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	488	14	$268	90%	95%	$-0.02	1	54
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	331	14	$152	90%	85%	$-0.07	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	177	14	$70	90%	85%	$-0.18	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	153	14	$81	90%	85%	$-0.20	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	59	12	$161	33%	50%	$0.32	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	11	12	$7	33%	50%	$0.04	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	104	12	$309	33%	85%	$0.37	0.05	1
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	56	12	$155	33%	85%	$0.36	11	11
Idaho	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	47	12	$154	33%	35%	$0.40	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	428	40	$935	59%	90%	$0.19	70	70
Idaho	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	94	10	$7	66%	65%	$-0.03	0.00	0.00
Idaho	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	229	10	$8	66%	95%	$-0.04	113	113
Idaho	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	302	10	$50	100%	65%	$-0.00	155	155
Idaho	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	302	10	$37	100%	10%	$-0.01	23	23
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.75	0.75
Idaho	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	1	1
Idaho	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	48	48
Idaho	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	9	9
Idaho	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	4	4
Idaho	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	2	2
Idaho	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	106	18	$1,585	2.5%	95%	$0.39	5	5
Idaho	Multifamily	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	11	45	$197	75%	95%	$0.96	18	18

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Cool Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	64	45	$874	75%	35%	$0.70	39	39
Idaho	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	201	15	$1,114	100%	N/A	$0.63	0.00	0.00
Idaho	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	128	15	$557	100%	N/A	$0.50	0.00	0.00
Idaho	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	282	15	$1,857	100%	N/A	$0.75	363	408
Idaho	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	946	15	$-1272.421	17%	N/A	$-0.15	278	312
Idaho	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	926	15	$-929.3158	8.3%	N/A	$-0.11	135	152
Idaho	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	5	20	$78	25%	95%	$1.42	0.00	0.00
Idaho	Multifamily	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	33	18	$663	25%	75%	$2.06	14	14
Idaho	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	44	5	$300	95%	65%	$1.58	64	64
Idaho	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	109	30	$675	5.0%	90%	$0.38	10	10
Idaho	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	72	11	$895	5.0%	95%	$0.51	7	7
Idaho	Multifamily	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	33	5	$200	95%	65%	$1.37	49	49
Idaho	Multifamily	Cool Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	68	45	$1,766	75%	25%	$0.21	27	27
Idaho	Multifamily	Cool Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	94	45	$2,016	5.0%	50%	$0.12	5	5
Idaho	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	160	20	$455	10%	95%	$0.28	35	35
Idaho	Multifamily	Cool Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	324	45	$5,207	65%	25%	$0.71	110	110
Idaho	Multifamily	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	16	45	$1,451	95%	60%	$2.27	0.00	0.00
Idaho	Multifamily	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	58	45	$9,426	95%	75%	$6.64	82	82
Idaho	Multifamily	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	53	45	$9,075	95%	95%	$5.41	0.00	0.00
Idaho	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	60	18	$1,585	20%	95%	$0.80	6	6
Idaho	Multifamily	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	7	45	$197	90%	95%	$1.01	3	3

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	122	15	$1,207	100%	N/A	$1.13	0.00	0.00
Idaho	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	77	15	$603	100%	N/A	$0.89	0.00	0.00
Idaho	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	171	15	$2,012	100%	N/A	$1.34	123	124
Idaho	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	545	15	$-1386.7895	17%	N/A	$-0.29	101	101
Idaho	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	524	15	$-1015.0921	17%	N/A	$-0.22	97	97
Idaho	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	5	20	$78	25%	95%	$1.42	0.00	0.00
Idaho	Multifamily	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	29	40	$184	75%	75%	$0.16	8	8
Idaho	Multifamily	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	30	40	$11,235	10%	100%	$11.99	0.78	0.78
Idaho	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	24	5	$300	95%	65%	$2.81	10	10
Idaho	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	61	30	$480	15%	90%	$0.50	3	3
Idaho	Multifamily	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$291	20%	65%	$4.58	0.08	0.08
Idaho	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	40	11	$895	10%	95%	$1.01	2	2
Idaho	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	90	20	$455	10%	95%	$0.50	4	4
Idaho	Multifamily	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	3	45	$1,451	95%	60%	$2.41	0.00	0.00
Idaho	Multifamily	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	26	45	$9,426	95%	75%	$7.39	7	7
Idaho	Multifamily	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	15	45	$9,075	95%	95%	$5.86	0.00	0.00
Idaho	Multifamily	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	5	45	$197	75%	95%	$1.55	1	1
Idaho	Multifamily	Cool Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	30	45	$874	75%	35%	$1.13	2	2
Idaho	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	93	20	$1,166	50%	N/A	$1.02	3	4

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	50	30	$675	5.0%	90%	$0.68	0.69	0.69
Idaho	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	40	9	$41	100%	N/A	$0.16	0.00	0.00
Idaho	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	48	9	$308	100%	N/A	$0.98	0.07	0.95
Idaho	Multifamily	Cool Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	31	45	$1,766	75%	25%	$0.28	1	1
Idaho	Multifamily	Cool Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	43	45	$2,016	5.0%	50%	$0.18	0.33	0.33
Idaho	Multifamily	Cool Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	150	45	$5,207	65%	25%	$1.07	7	7
Idaho	Multifamily	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	7	45	$1,451	95%	60%	$2.80	0.00	0.00
Idaho	Multifamily	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	26	45	$9,426	95%	75%	$9.03	5	5
Idaho	Multifamily	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	24	45	$9,075	95%	95%	$6.84	0.00	0.00
Idaho	Multifamily	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	3	45	$197	90%	95%	$1.40	0.20	0.20
Idaho	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	77	20	$960	95%	N/A	$1.23	3	3
Idaho	Multifamily	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	13	40	$11,235	10%	100%	$15.15	0.05	0.05
Idaho	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	27	30	$480	15%	90%	$0.88	0.24	0.24
Idaho	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	23	9	$41	100%	N/A	$0.27	0.00	0.00
Idaho	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	27	9	$308	100%	N/A	$1.71	0.00	0.00
Idaho	Multifamily	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.68	45	$291	20%	65%	$5.48	0.00	0.00
Idaho	Multifamily	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1	45	$1,451	95%	60%	$2.54	0.00	0.00
Idaho	Multifamily	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	11	45	$9,426	95%	75%	$8.58	0.54	0.55
Idaho	Multifamily	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	7	45	$9,075	95%	95%	$6.32	0.00	0.00
Idaho	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	10	10

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	3	3
Idaho	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.07	16	16
Idaho	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.07	7	7
Idaho	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	143	11	$372	100%	N/A	$0.35	23	108
Idaho	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	134	11	$343	100%	N/A	$0.35	0.00	0.00
Idaho	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	35	11	$75	100%	N/A	$0.29	0.00	0.00
Idaho	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	143	11	$372	100%	N/A	$0.35	12	32
Idaho	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	134	11	$343	100%	N/A	$0.35	0.00	0.00
Idaho	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	35	11	$75	100%	N/A	$0.29	0.00	0.00
Idaho	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	108	20	$3	100%	N/A	$0.00	0.00	1
Idaho	Multifamily	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	1,040	20	$125	17%	100%	$0.01	263	263
Idaho	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	108	20	$3	100%	N/A	$0.00	0.00	0.71
Idaho	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,758	18	$1,585	2.5%	95%	$0.09	30	30
Idaho	Multifamily	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	45	45	$197	75%	95%	$0.34	23	23
Idaho	Multifamily	Heat Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	275	45	$874	75%	35%	$0.25	53	53
Idaho	Multifamily	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	766	20	$243	100%	80%	$0.03	448	448
Idaho	Multifamily	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	453	20	$112	100%	60%	$0.02	0.00	0.00
Idaho	Multifamily	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	239	18	$663	25%	75%	$0.29	33	33
Idaho	Multifamily	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	69	45	$192	25%	85%	$0.24	10	10
Idaho	Multifamily	Heat Central	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,683	45	$623	25%	5%	$0.03	14	14
Idaho	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	8,011	20	$5,761	5.0%	N/A	$0.07	86	100

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,633	20	$4,791	0.0%	N/A	$0.06	0.00	0.00
Idaho	Multifamily	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	388	11	$256	75%	50%	$0.09	101	101
Idaho	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	293	30	$675	5.0%	90%	$0.19	9	9
Idaho	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	996	11	$895	5.0%	95%	$0.12	32	32
Idaho	Multifamily	Heat Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	2,705	45	$1,766	75%	25%	$0.06	349	349
Idaho	Multifamily	Heat Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,920	45	$2,016	5.0%	50%	$0.04	65	65
Idaho	Multifamily	Heat Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,016	45	$5,207	65%	25%	$0.21	216	216
Idaho	Multifamily	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	308	45	$1,451	95%	60%	$0.39	0.00	0.00
Idaho	Multifamily	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	547	45	$9,426	95%	75%	$1.42	0.00	0.00
Idaho	Multifamily	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	773	45	$9,075	95%	95%	$0.98	450	450
Idaho	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,087	18	$1,585	20%	95%	$0.15	43	43
Idaho	Multifamily	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	71	45	$197	90%	95%	$0.23	11	11
Idaho	Multifamily	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	241	45	$2,844	5.0%	95%	$1.00	2	2
Idaho	Multifamily	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	52	45	$2,893	5.0%	95%	$4.73	0.00	0.00
Idaho	Multifamily	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	1,171	20	$243	100%	80%	$0.02	159	159
Idaho	Multifamily	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	694	20	$112	100%	60%	$0.02	0.00	0.00
Idaho	Multifamily	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	309	40	$184	75%	75%	$0.05	30	30
Idaho	Multifamily	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	89	45	$192	75%	85%	$0.18	8	8
Idaho	Multifamily	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	452	40	$11,235	10%	100%	$2.10	3	3
Idaho	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,876	20	$5,330	5.0%	N/A	$0.11	32	32
Idaho	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,672	20	$4,278	0.0%	N/A	$0.09	0.00	0.00
Idaho	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	181	30	$480	15%	90%	$0.22	3	3
Idaho	Multifamily	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	33	45	$291	20%	65%	$0.72	0.68	0.68
Idaho	Multifamily	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,308	20	$663	0.0%	95%	$0.03	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	616	11	$895	10%	95%	$0.19	12	12
Idaho	Multifamily	Heat Central	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	517	45	$1,065	50%	95%	$0.18	37	37
Idaho	Multifamily	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	403	45	$1,451	95%	60%	$0.31	0.00	0.00
Idaho	Multifamily	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	725	45	$9,426	95%	75%	$1.09	0.00	0.00
Idaho	Multifamily	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,014	45	$9,075	95%	95%	$0.76	130	130
Idaho	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	735	18	$1,585	2.5%	95%	$0.22	0.00	0.00
Idaho	Multifamily	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	27	45	$197	75%	95%	$0.62	0.00	0.00
Idaho	Multifamily	Heat Pump	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	165	45	$874	75%	35%	$0.45	0.00	0.00
Idaho	Multifamily	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	321	20	$243	100%	80%	$0.08	0.00	0.00
Idaho	Multifamily	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	190	20	$112	100%	60%	$0.06	0.00	0.00
Idaho	Multifamily	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	125	18	$663	25%	75%	$0.55	0.00	0.00
Idaho	Multifamily	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	22	45	$192	25%	85%	$0.74	0.00	0.00
Idaho	Multifamily	Heat Pump	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	567	45	$623	25%	5%	$0.09	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	378	20	$970	100%	N/A	$0.26	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	134	20	$727	100%	N/A	$0.54	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	747	20	$1,455	100%	N/A	$0.19	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	190	20	$485	100%	N/A	$0.25	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	2,892	20	$6,184	13%	N/A	$0.21	0.00	0.00
Idaho	Multifamily	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	131	11	$256	75%	50%	$0.27	0.00	0.00
Idaho	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	120	5	$300	95%	65%	$0.58	0.00	0.00
Idaho	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	22	30	$675	5.0%	90%	$2.76	0.00	0.00

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Idaho	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	502	11	$895	5.0%	95%	$0.24	0.00	0.00
Idaho	Multifamily	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	92	5	$200	20%	75%	$0.50	0.00	0.00
Idaho	Multifamily	Heat Pump	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	1,218	45	$1,766	75%	25%	$0.12	0.00	0.00
Idaho	Multifamily	Heat Pump	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	1,760	45	$2,016	5.0%	50%	$0.10	0.00	0.00
Idaho	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	21	20	$455	10%	95%	$2.14	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,135	45	$5,207	65%	25%	$0.39	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	144	45	$1,451	95%	60%	$0.85	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	276	45	$9,426	95%	75%	$2.90	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	371	45	$9,075	95%	95%	$2.08	0.00	0.00
Idaho	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	437	18	$1,585	20%	95%	$0.38	0.00	0.00
Idaho	Multifamily	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	35	45	$197	90%	95%	$0.47	0.00	0.00
Idaho	Multifamily	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	93	45	$2,844	5.0%	95%	$2.59	0.00	0.00
Idaho	Multifamily	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	14	45	$2,893	5.0%	95%	$17.13	0.00	0.00
Idaho	Multifamily	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	423	20	$243	100%	80%	$0.06	0.00	0.00
Idaho	Multifamily	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	251	20	$112	100%	60%	$0.04	0.00	0.00
Idaho	Multifamily	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	150	40	$184	75%	75%	$0.11	0.00	0.00
Idaho	Multifamily	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	26	45	$192	75%	85%	$0.62	0.00	0.00
Idaho	Multifamily	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	218	40	$11,235	10%	100%	$4.44	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	204	20	$1,051	100%	N/A	$0.51	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	50	20	$788	100%	N/A	$1.54	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	436	20	$1,577	100%	N/A	$0.36	0.00	0.00
Idaho	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	116	20	$525	100%	N/A	$0.45	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	1,816	20	$6,805	25%	N/A	$0.37	0.00	0.00
Idaho	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	70	5	$300	95%	65%	$0.98	0.00	0.00
Idaho	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	13	30	$480	15%	90%	$3.35	0.00	0.00
Idaho	Multifamily	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	15	45	$291	20%	65%	$1.58	0.00	0.00
Idaho	Multifamily	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	824	20	$663	0.0%	95%	$0.08	0.00	0.00
Idaho	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	297	11	$895	10%	95%	$0.41	0.00	0.00
Idaho	Multifamily	Heat Pump	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	201	45	$1,065	50%	95%	$0.45	0.00	0.00
Idaho	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	12	20	$455	10%	95%	$3.75	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	162	45	$1,451	95%	60%	$0.76	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	316	45	$9,426	95%	75%	$2.54	0.00	0.00
Idaho	Multifamily	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	418	45	$9,075	95%	95%	$1.85	0.00	0.00
Idaho	Multifamily	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	42	45	$197	75%	95%	$0.36	56	56
Idaho	Multifamily	Heat Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	260	45	$874	75%	35%	$0.26	126	126
Idaho	Multifamily	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	723	20	$243	100%	80%	$0.03	1,065	1,065
Idaho	Multifamily	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	427	20	$112	100%	60%	$0.03	0.00	0.00
Idaho	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	3,304	20	$1,166	50%	N/A	$0.03	966	1,117
Idaho	Multifamily	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	65	45	$192	25%	85%	$0.25	24	24
Idaho	Multifamily	Heat Room	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,588	45	$623	25%	5%	$0.03	35	35
Idaho	Multifamily	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	366	11	$256	75%	50%	$0.10	241	241
Idaho	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	276	30	$675	5.0%	90%	$0.20	21	21
Idaho	Multifamily	Heat Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	2,553	45	$1,766	75%	25%	$0.06	833	833
Idaho	Multifamily	Heat Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,700	45	$2,016	5.0%	50%	$0.05	155	155
Idaho	Multifamily	Heat Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,902	45	$5,207	65%	25%	$0.22	516	516
Idaho	Multifamily	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	290	45	$1,451	95%	60%	$0.42	0.00	0.00
Idaho	Multifamily	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	516	45	$9,426	95%	75%	$1.50	0.00	0.00

Table C-2.1. Residential Measure Details

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Idaho	Multifamily	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	729	45	$9,075	95%	95%	$1.03	1,075	1,075
Idaho	Multifamily	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	68	45	$197	90%	95%	$0.24	19	19
Idaho	Multifamily	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	231	45	$2,844	5.0%	95%	$1.05	3	3
Idaho	Multifamily	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	49	45	$2,893	5.0%	95%	$4.93	0.00	0.00
Idaho	Multifamily	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	1,124	20	$243	100%	80%	$0.02	274	274
Idaho	Multifamily	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	666	20	$112	100%	60%	$0.02	0.00	0.00
Idaho	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	3,304	20	$1,000	95%	N/A	$0.03	1,158	1,161
Idaho	Multifamily	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	85	45	$192	75%	85%	$0.19	15	15
Idaho	Multifamily	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	434	40	$11,235	10%	100%	$2.19	6	6
Idaho	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	173	30	$480	15%	90%	$0.23	6	6
Idaho	Multifamily	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	32	45	$291	20%	65%	$0.75	1	1
Idaho	Multifamily	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,215	20	$663	0.0%	95%	$0.03	0.00	0.00
Idaho	Multifamily	Heat Room	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	496	45	$1,065	50%	95%	$0.18	67	67
Idaho	Multifamily	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	386	45	$1,451	95%	60%	$0.32	0.00	0.00
Idaho	Multifamily	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	695	45	$9,426	95%	75%	$1.14	0.00	0.00
Idaho	Multifamily	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	973	45	$9,075	95%	95%	$0.79	230	230
Idaho	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	39	39
Idaho	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	4	4
Idaho	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	21	7	$1	45%	N/A	$-0.04	34	34
Idaho	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	360	360
Idaho	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	21	7	$1	45%	N/A	$-0.04	16	16
Idaho	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	130	130
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	85%	N/A	$-0.01	0.00	949

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Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	0.00	426
Idaho	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.97	5	5
Idaho	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	5.0%	95%	$3.33	7	7
Idaho	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.33	3	3
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	85%	N/A	$-0.01	0.00	146
Idaho	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	25	80
Idaho	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.97	2	2
Idaho	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	5.0%	95%	$3.33	2	2
Idaho	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.33	1	1
Idaho	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	104	104
Idaho	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	52	52
Idaho	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	3	3
Idaho	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	4	4
Idaho	Multifamily	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Multifamily	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	3	3
Idaho	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	102	102
Idaho	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	1	1
Idaho	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	38	38
Idaho	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	27	27
Idaho	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.01	0.01

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Idaho	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	164	20	$633	100%	N/A	$0.38	240	271
Idaho	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Multifamily	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,190	20	$125	5.0%	100%	$0.01	288	288
Idaho	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	164	20	$633	100%	N/A	$0.38	193	194
Idaho	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	101	101
Idaho	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	36	36
Idaho	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	59	59
Idaho	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	13	13
Idaho	Multifamily	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	266	20	$120	100%	N/A	$0.04	271	279
Idaho	Multifamily	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	61	20	$60	100%	N/A	$0.10	0.00	0.00
Idaho	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,288	13	$604	100%	N/A	$0.08	191	208
Idaho	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	28	13	$361	100%	N/A	$2.41	0.00	0.00
Idaho	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,288	13	$604	100%	N/A	$0.08	86	84
Idaho	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	28	13	$361	100%	N/A	$2.41	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	157	14	$140	52%	95%	$-0.06	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	56	14	$58	52%	95%	$-0.34	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	274	14	$210	52%	95%	$-0.01	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	204	14	$198	52%	99%	$-0.02	0.10	2

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	103	14	$116	52%	99%	$-0.12	4	5
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	321	14	$268	52%	99%	$0.01	0.22	5
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	217	14	$152	52%	90%	$-0.04	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	116	14	$70	52%	90%	$-0.15	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	39	12	$161	33%	50%	$0.51	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	7	12	$7	33%	50%	$0.08	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	68	12	$309	33%	85%	$0.57	0.00	0.19
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	37	12	$155	33%	85%	$0.54	1	1
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	31	12	$154	33%	35%	$0.61	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	288	40	$935	29%	90%	$0.28	10	10
Idaho	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	71	10	$3	100%	25%	$-0.04	2	2
Idaho	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	62	10	$4	50%	65%	$-0.03	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	151	10	$5	50%	95%	$-0.04	9	9
Idaho	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	199	10	$39	100%	65%	$0.00	17	17
Idaho	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	199	10	$29	100%	10%	$-0.00	2	2

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.17	0.17
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	2	2
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	0.45	0.45
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	2	2
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	157	14	$140	52%	95%	$-0.06	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	56	14	$58	52%	95%	$-0.34	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	274	14	$210	52%	95%	$-0.01	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	204	14	$198	52%	99%	$-0.02	0.00	0.50
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	103	14	$116	52%	99%	$-0.12	1	1
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	321	14	$268	52%	99%	$0.01	0.03	1
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	217	14	$152	52%	90%	$-0.04	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	116	14	$70	52%	90%	$-0.15	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	100	14	$81	52%	90%	$-0.16	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	39	12	$161	33%	50%	$0.51	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	7	12	$7	33%	50%	$0.08	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	68	12	$309	33%	85%	$0.57	0.00	0.03
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	37	12	$155	33%	85%	$0.54	0.37	0.37
Idaho	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	31	12	$154	33%	35%	$0.61	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	300	40	$935	59%	90%	$0.27	2	2
Idaho	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	62	10	$4	50%	65%	$-0.03	0.00	0.00
Idaho	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	151	10	$5	50%	95%	$-0.04	2	2
Idaho	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	199	10	$39	100%	65%	$0.00	4	4
Idaho	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	199	10	$29	100%	10%	$-0.00	0.74	0.74
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.04	0.04
Idaho	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.11	0.11
Idaho	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,151	13	$1,136	0.0%	N/A	$0.14	0.00	0.00
Idaho	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	69	13	$72	100%	N/A	$0.13	0.00	18
Idaho	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,151	13	$1,136	0.0%	N/A	$0.14	0.00	0.00
Idaho	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	69	13	$72	100%	N/A	$0.13	0.00	5
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	157	14	$140	52%	95%	$-0.06	0.00	0.00

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Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	56	14	$58	52%	95%	$-0.34	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	274	14	$210	52%	95%	$-0.01	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	204	14	$198	52%	99%	$-0.02	0.54	29
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	103	14	$116	52%	99%	$-0.12	98	98
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	321	14	$268	52%	99%	$0.01	2	66
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	217	14	$152	52%	90%	$-0.04	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	116	14	$70	52%	90%	$-0.15	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	39	12	$161	33%	50%	$0.51	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	7	12	$7	33%	50%	$0.08	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	68	12	$309	33%	85%	$0.57	0.02	2
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	37	12	$155	33%	85%	$0.54	25	25
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	31	12	$154	33%	35%	$0.61	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	280	40	$935	29%	90%	$0.29	206	206
Idaho	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	71	10	$3	100%	25%	$-0.04	49	49

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Idaho	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	62	10	$4	50%	65%	$-0.03	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	151	10	$5	50%	95%	$-0.04	199	199
Idaho	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	199	10	$39	100%	65%	$0.00	359	359
Idaho	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	199	10	$29	100%	10%	$-0.00	55	55
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	3	3
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	57	57
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	8	8
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	52	52
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	157	14	$140	52%	95%	$-0.06	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	56	14	$58	52%	95%	$-0.34	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	274	14	$210	52%	95%	$-0.01	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	204	14	$198	52%	99%	$-0.02	0.22	12
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	103	14	$116	52%	99%	$-0.12	34	34
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	321	14	$268	52%	99%	$0.01	0.82	26
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	217	14	$152	52%	90%	$-0.04	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	116	14	$70	52%	90%	$-0.15	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	100	14	$81	52%	90%	$-0.16	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	39	12	$161	33%	50%	$0.51	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	7	12	$7	33%	50%	$0.08	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	68	12	$309	33%	85%	$0.57	0.04	0.94
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	37	12	$155	33%	85%	$0.54	9	9
Idaho	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	31	12	$154	33%	35%	$0.61	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	281	40	$935	59%	90%	$0.29	56	56
Idaho	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	62	10	$4	50%	65%	$-0.03	0.00	0.00
Idaho	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	151	10	$5	50%	95%	$-0.04	69	69
Idaho	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	199	10	$39	100%	65%	$0.00	125	125
Idaho	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	199	10	$29	100%	10%	$-0.00	19	19
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	1	1
Idaho	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	2	2
Idaho	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.05	541	541
Idaho	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.05	105	105
Idaho	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.44	24	24
Idaho	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.44	15	15
Idaho	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	108	18	$1,585	13%	95%	$0.36	92	92
Idaho	Single Family	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	12	45	$313	75%	95%	$1.43	64	64

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Cool Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	72	45	$1,385	75%	32%	$1.06	121	121
Idaho	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	281	15	$1,114	100%	N/A	$0.45	0.00	0.00
Idaho	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	178	15	$557	100%	N/A	$0.36	0.00	0.00
Idaho	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	393	15	$1,857	100%	N/A	$0.54	60	73
Idaho	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,338	15	$-1272.421	33%	N/A	$-0.11	322	388
Idaho	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,318	15	$-929.3158	17%	N/A	$-0.08	785	948
Idaho	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	8	20	$121	50%	95%	$1.42	0.01	0.01
Idaho	Single Family	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	43	18	$1,051	25%	74%	$2.53	57	57
Idaho	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	44	5	$300	95%	65%	$1.56	197	197
Idaho	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	110	30	$675	40%	90%	$0.37	265	265
Idaho	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	73	11	$895	25%	95%	$0.50	112	112
Idaho	Single Family	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	34	5	$200	95%	64%	$1.36	149	149
Idaho	Single Family	Cool Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	62	45	$2,223	75%	25%	$0.33	72	72
Idaho	Single Family	Cool Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	88	45	$2,538	5.0%	50%	$0.19	13	13
Idaho	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	162	20	$455	50%	95%	$0.28	552	552
Idaho	Single Family	Cool Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	368	45	$8,249	65%	22%	$1.08	289	289
Idaho	Single Family	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	21	45	$2,299	95%	60%	$3.52	0.00	0.00
Idaho	Single Family	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	70	45	$14,932	95%	75%	$9.93	267	267
Idaho	Single Family	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	66	45	$14,376	95%	95%	$8.28	0.00	0.00
Idaho	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	54	18	$1,585	45%	95%	$0.92	31	31
Idaho	Single Family	Cool Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	8	45	$313	90%	95%	$1.58	8	8

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	150	15	$1,021	100%	N/A	$0.77	0.00	0.00
Idaho	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	95	15	$510	100%	N/A	$0.61	0.00	0.00
Idaho	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	211	15	$1,702	100%	N/A	$0.92	18	18
Idaho	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	697	15	$-1158.0527	33%	N/A	$-0.19	122	123
Idaho	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	678	15	$-843.5395	33%	N/A	$-0.14	469	474
Idaho	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	8	20	$121	50%	95%	$1.42	0.00	0.00
Idaho	Single Family	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	43	40	$292	75%	75%	$0.13	28	28
Idaho	Single Family	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	27	40	$17,419	10%	100%	$22.66	1	1
Idaho	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	22	5	$300	95%	65%	$3.10	23	23
Idaho	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	55	30	$480	65%	90%	$0.55	32	32
Idaho	Single Family	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.83	45	$462	20%	65%	$12.07	0.10	0.10
Idaho	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	36	11	$895	50%	95%	$1.17	23	23
Idaho	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	81	20	$455	50%	95%	$0.55	44	44
Idaho	Single Family	Cool Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	5	45	$2,299	95%	60%	$4.23	0.00	0.00
Idaho	Single Family	Cool Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	31	45	$14,932	95%	75%	$12.43	18	18
Idaho	Single Family	Cool Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	20	45	$14,376	95%	95%	$10.13	0.00	0.00
Idaho	Single Family	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	7	45	$313	75%	95%	$2.01	39	39
Idaho	Single Family	Cool Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	44	45	$1,385	75%	32%	$1.49	73	73
Idaho	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	145	20	$1,166	50%	N/A	$0.65	138	171

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Idaho	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	68	30	$675	40%	90%	$0.57	166	166
Idaho	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	55	9	$41	100%	N/A	$0.11	0.00	0.00
Idaho	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	65	9	$308	100%	N/A	$0.72	2	29
Idaho	Single Family	Cool Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	39	45	$2,223	75%	25%	$0.44	47	47
Idaho	Single Family	Cool Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	54	45	$2,538	5.0%	50%	$0.28	8	8
Idaho	Single Family	Cool Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	230	45	$8,249	65%	22%	$1.47	206	206
Idaho	Single Family	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	13	45	$2,299	95%	60%	$4.20	0.00	0.00
Idaho	Single Family	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	44	45	$14,932	95%	75%	$12.63	191	191
Idaho	Single Family	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	41	45	$14,376	95%	95%	$10.05	0.00	0.00
Idaho	Single Family	Cool Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	6	45	$313	90%	95%	$1.93	8	8
Idaho	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	86	20	$960	95%	N/A	$1.11	76	76
Idaho	Single Family	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	19	40	$17,419	10%	100%	$25.90	1	1
Idaho	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	38	30	$480	65%	90%	$0.74	36	36
Idaho	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	32	9	$41	100%	N/A	$0.19	0.00	0.00
Idaho	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	38	9	$308	100%	N/A	$1.21	0.00	0.00
Idaho	Single Family	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.58	45	$462	20%	65%	$13.14	0.12	0.12
Idaho	Single Family	Cool Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	3	45	$2,299	95%	60%	$4.44	0.00	0.00
Idaho	Single Family	Cool Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	22	45	$14,932	95%	75%	$13.75	23	23
Idaho	Single Family	Cool Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	14	45	$14,376	95%	95%	$10.75	0.00	0.00
Idaho	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	11	11
Idaho	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	8	8
Idaho	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	114	114

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Idaho	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	38	38
Idaho	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.07	1	1
Idaho	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.07	0.71	0.71
Idaho	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	246	11	$372	100%	N/A	$0.21	316	1,480
Idaho	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	232	11	$343	100%	N/A	$0.20	0.00	0.00
Idaho	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	61	11	$75	100%	N/A	$0.17	0.00	0.00
Idaho	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	246	11	$372	100%	N/A	$0.21	171	442
Idaho	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	232	11	$343	100%	N/A	$0.20	0.00	0.00
Idaho	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	61	11	$75	100%	N/A	$0.17	0.00	0.00
Idaho	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	108	20	$3	100%	N/A	$0.00	0.00	28
Idaho	Single Family	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	1,040	20	$125	17%	100%	$0.01	4,378	4,378
Idaho	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	39	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	108	20	$3	100%	N/A	$0.00	0.00	11
Idaho	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	2,726	18	$1,585	13%	95%	$0.06	592	592
Idaho	Single Family	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	77	45	$313	75%	95%	$0.33	100	100
Idaho	Single Family	Heat Central	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	473	45	$1,385	75%	32%	$0.24	205	205
Idaho	Single Family	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	415	20	$121	100%	80%	$0.03	594	594
Idaho	Single Family	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	245	20	$56	100%	60%	$0.02	0.00	0.00
Idaho	Single Family	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	573	18	$1,051	25%	74%	$0.19	193	193
Idaho	Single Family	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	97	45	$304	25%	85%	$0.27	36	36
Idaho	Single Family	Heat Central	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,318	45	$987	25%	41%	$0.04	416	416
Idaho	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	11,836	20	$5,761	50%	N/A	$0.05	3,715	4,344

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	11,654	20	$4,791	0.0%	N/A	$0.04	0.00	0.00
Idaho	Single Family	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	607	11	$406	75%	50%	$0.09	396	396
Idaho	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	454	30	$675	40%	90%	$0.13	281	281
Idaho	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,545	11	$895	25%	95%	$0.08	626	626
Idaho	Single Family	Heat Central	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,735	45	$2,223	75%	25%	$0.05	1,178	1,178
Idaho	Single Family	Heat Central	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	5,409	45	$2,538	5.0%	50%	$0.04	220	220
Idaho	Single Family	Heat Central	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	3,456	45	$8,249	65%	22%	$0.20	785	785
Idaho	Single Family	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	539	45	$2,299	95%	60%	$0.36	0.00	0.00
Idaho	Single Family	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	956	45	$14,932	95%	75%	$1.31	0.00	0.00
Idaho	Single Family	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	1,353	45	$14,376	95%	95%	$0.90	1,933	1,933
Idaho	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,613	18	$1,585	45%	95%	$0.10	321	321
Idaho	Single Family	Heat Central	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	117	45	$313	90%	95%	$0.22	39	39
Idaho	Single Family	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	318	45	$4,507	25%	95%	$1.20	29	29
Idaho	Single Family	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	167	45	$4,585	25%	95%	$2.33	0.00	0.00
Idaho	Single Family	Heat Central	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	612	20	$121	100%	80%	$0.02	179	179
Idaho	Single Family	Heat Central	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	362	20	$56	100%	60%	$0.02	0.00	0.00
Idaho	Single Family	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	769	40	$292	75%	75%	$0.03	169	169
Idaho	Single Family	Heat Central	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	122	45	$304	75%	85%	$0.21	27	27
Idaho	Single Family	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	672	40	$17,419	10%	100%	$2.23	13	13
Idaho	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	6,918	20	$4,510	50%	N/A	$0.06	1,019	1,027
Idaho	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	6,794	20	$3,620	0.0%	N/A	$0.05	0.00	0.00
Idaho	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	268	30	$480	65%	90%	$0.16	53	53
Idaho	Single Family	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	40	45	$462	20%	65%	$0.96	1	1
Idaho	Single Family	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	3,534	20	$1,051	85%	95%	$0.03	949	949

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	914	11	$895	50%	95%	$0.13	164	164
Idaho	Single Family	Heat Central	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	685	45	$1,340	50%	95%	$0.17	87	87
Idaho	Single Family	Heat Central	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	663	45	$2,299	95%	60%	$0.29	0.00	0.00
Idaho	Single Family	Heat Central	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,198	45	$14,932	95%	75%	$1.06	0.00	0.00
Idaho	Single Family	Heat Central	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,678	45	$14,376	95%	95%	$0.73	375	375
Idaho	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,176	18	$1,585	13%	95%	$0.14	59	59
Idaho	Single Family	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	49	45	$313	75%	95%	$0.54	14	14
Idaho	Single Family	Heat Pump	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	298	45	$1,385	75%	32%	$0.39	30	30
Idaho	Single Family	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	205	20	$121	100%	80%	$0.06	68	68
Idaho	Single Family	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	121	20	$56	100%	60%	$0.05	0.00	0.00
Idaho	Single Family	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	363	18	$1,051	25%	74%	$0.30	28	28
Idaho	Single Family	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	31	45	$304	25%	85%	$0.82	2	2
Idaho	Single Family	Heat Pump	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	802	45	$987	25%	41%	$0.10	33	33
Idaho	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	182	20	$970	100%	N/A	$0.53	0.00	0.00
Idaho	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	787	20	$1,455	100%	N/A	$0.18	55	69
Idaho	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	218	20	$485	100%	N/A	$0.22	0.00	0.00
Idaho	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	4,693	20	$6,184	20%	N/A	$0.13	109	133
Idaho	Single Family	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	266	11	$406	75%	50%	$0.21	40	40
Idaho	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	181	5	$300	95%	64%	$0.38	47	47
Idaho	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	33	30	$675	40%	90%	$1.86	4	4
Idaho	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	786	11	$895	25%	95%	$0.16	74	74
Idaho	Single Family	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	139	5	$200	20%	73%	$0.33	8	8

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Heat Pump	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	1,924	45	$2,223	75%	25%	$0.10	140	140
Idaho	Single Family	Heat Pump	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	2,742	45	$2,538	5.0%	50%	$0.08	25	25
Idaho	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	28	20	$455	50%	95%	$1.61	5	5
Idaho	Single Family	Heat Pump	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,234	45	$8,249	65%	22%	$0.31	117	117
Idaho	Single Family	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	285	45	$2,299	95%	60%	$0.68	0.00	0.00
Idaho	Single Family	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	543	45	$14,932	95%	75%	$2.34	0.00	0.00
Idaho	Single Family	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	727	45	$14,376	95%	95%	$1.68	239	239
Idaho	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	684	18	$1,585	45%	95%	$0.24	31	31
Idaho	Single Family	Heat Pump	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	62	45	$313	90%	95%	$0.43	4	4
Idaho	Single Family	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	136	45	$4,507	25%	95%	$2.82	2	2
Idaho	Single Family	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	74	45	$4,585	25%	95%	$5.24	0.00	0.00
Idaho	Single Family	Heat Pump	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	244	20	$121	100%	80%	$0.05	16	16
Idaho	Single Family	Heat Pump	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	145	20	$56	100%	60%	$0.04	0.00	0.00
Idaho	Single Family	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	423	40	$292	75%	75%	$0.06	21	21
Idaho	Single Family	Heat Pump	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	36	45	$304	75%	85%	$0.71	1	1
Idaho	Single Family	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	332	40	$17,419	10%	100%	$4.54	1	1
Idaho	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	124	20	$889	100%	N/A	$0.71	0.00	0.00
Idaho	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	486	20	$1,334	100%	N/A	$0.27	15	15
Idaho	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	149	20	$444	100%	N/A	$0.30	0.00	0.00
Idaho	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	2,886	20	$5,758	40%	N/A	$0.20	83	83
Idaho	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	102	5	$300	95%	64%	$0.68	8	8
Idaho	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	18	30	$480	65%	90%	$2.38	0.85	0.85

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	20	45	$462	20%	65%	$1.96	0.21	0.21
Idaho	Single Family	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,375	20	$1,051	85%	95%	$0.08	87	87
Idaho	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	451	11	$895	50%	95%	$0.27	20	20
Idaho	Single Family	Heat Pump	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	293	45	$1,340	50%	95%	$0.39	9	9
Idaho	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	14	20	$455	50%	95%	$3.13	0.62	0.62
Idaho	Single Family	Heat Pump	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	295	45	$2,299	95%	60%	$0.66	0.00	0.00
Idaho	Single Family	Heat Pump	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	575	45	$14,932	95%	75%	$2.21	0.00	0.00
Idaho	Single Family	Heat Pump	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	761	45	$14,376	95%	95%	$1.61	42	42
Idaho	Single Family	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	Existing	69	45	$313	75%	95%	$0.37	340	340
Idaho	Single Family	Heat Room	Ceiling Insulation (ID) - Code	R-49 (ID Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	424	45	$1,385	75%	32%	$0.27	697	697
Idaho	Single Family	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	372	20	$121	100%	80%	$0.03	2,025	2,025
Idaho	Single Family	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	Existing	220	20	$56	100%	60%	$0.03	0.00	0.00
Idaho	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	5,236	20	$1,166	50%	N/A	$0.02	5,779	6,613
Idaho	Single Family	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	Existing	87	45	$304	25%	85%	$0.30	124	124
Idaho	Single Family	Heat Room	Floor Insulation (ID) - Code	R-30 (ID Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,078	45	$987	25%	41%	$0.04	1,430	1,430
Idaho	Single Family	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	545	11	$406	75%	50%	$0.10	1,352	1,352
Idaho	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	407	30	$675	40%	90%	$0.14	961	961
Idaho	Single Family	Heat Room	Wall Insulation 2x4 (ID) - Below Code	R-13 (Below ID Code - Maximum Insulation Feasible)	R-2 (Existing Insulation)	Savings Per Building	Existing	3,349	45	$2,223	75%	25%	$0.06	4,084	4,084
Idaho	Single Family	Heat Room	Wall Insulation 2x6 (ID) - Code	R-20 (ID Code)	R-2 (Existing Insulation)	Savings Per Building	Existing	4,850	45	$2,538	5.0%	50%	$0.04	764	764
Idaho	Single Family	Heat Room	Window (ID) - Code	U-value 0.35 Window (ID Code)	Existing Window - Single Pane	Savings Per Building	Existing	3,099	45	$8,249	65%	22%	$0.22	2,726	2,726
Idaho	Single Family	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	483	45	$2,299	95%	60%	$0.40	0.00	0.00
Idaho	Single Family	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	857	45	$14,932	95%	75%	$1.46	0.00	0.00
Idaho	Single Family	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	Existing	1,213	45	$14,376	95%	95%	$1.00	6,714	6,714
Idaho	Single Family	Heat Room	Ceiling Insulation (ID) - Above Code	R-60 (Above ID Code)	R-49 (ID Code)	Savings Per Building	New	109	45	$313	90%	95%	$0.24	106	106
Idaho	Single Family	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	297	45	$4,507	25%	95%	$1.29	76	76
Idaho	Single Family	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	156	45	$4,585	25%	95%	$2.49	0.00	0.00
Idaho	Single Family	Heat Room	Door (ID) - Above Code	R-10 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	571	20	$121	100%	80%	$0.02	486	486
Idaho	Single Family	Heat Room	Door (ID) - Above Code	R-5 Door (Above ID Code)	R-2.9 Door (ID Code)	Savings Per Building	New	338	20	$56	100%	60%	$0.02	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	5,236	20	$1,000	95%	N/A	$0.02	5,625	5,660
Idaho	Single Family	Heat Room	Floor Insulation (ID) - Above Code	R-38 (Above ID Code)	R-30 (ID Code)	Savings Per Building	New	114	45	$304	75%	85%	$0.23	78	78
Idaho	Single Family	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	627	40	$17,419	10%	100%	$2.38	36	36
Idaho	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	250	30	$480	65%	90%	$0.17	149	149
Idaho	Single Family	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	38	45	$462	20%	65%	$1.03	5	5
Idaho	Single Family	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	3,296	20	$1,051	85%	95%	$0.03	2,671	2,671
Idaho	Single Family	Heat Room	Wall Insulation 2x6 (ID) - Above Code	R-21 + R-5 Sheathing (Above ID Code)	R-20 (ID Code)	Savings Per Building	New	639	45	$1,340	50%	95%	$0.18	252	252
Idaho	Single Family	Heat Room	Window (ID) - Tier 1 Above Code	U-value 0.30 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	619	45	$2,299	95%	60%	$0.32	0.00	0.00
Idaho	Single Family	Heat Room	Window (ID) - Tier 2 Above Code	U-value 0.25 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,118	45	$14,932	95%	75%	$1.13	0.00	0.00
Idaho	Single Family	Heat Room	Window (ID) - Tier 3 Above Code	U-value 0.22 Window (Above ID Code)	U-value 0.35 Window (ID Code)	Savings Per Building	New	1,565	45	$14,376	95%	95%	$0.78	1,089	1,089
Idaho	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.88	257	257
Idaho	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.88	29	29
Idaho	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	21	7	$1	45%	N/A	$-0.04	330	330
Idaho	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	3,488	3,488
Idaho	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	21	7	$1	45%	N/A	$-0.04	162	162
Idaho	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	1,263	1,263
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	22	5	$1	85%	N/A	$-0.01	0.00	9,187
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	0.00	4,124
Idaho	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.97	55	55
Idaho	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.33	147	147
Idaho	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.33	29	29
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	100%	N/A	$-0.02	0.00	0.00
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	22	5	$1	85%	N/A	$-0.01	0.00	1,408
Idaho	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	248	772
Idaho	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.97	19	19
Idaho	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.33	52	52
Idaho	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.33	10	10
Idaho	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	604	604
Idaho	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	304	304
Idaho	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	38	38
Idaho	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	55	55
Idaho	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	22	22
Idaho	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	625	625
Idaho	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	8	8
Idaho	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	233	233
Idaho	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	Existing	440	10	$175	40%	N/A	$0.06	15	15
Idaho	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	Existing	1,170	10	$750	75%	N/A	$0.09	141	141
Idaho	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	New	440	10	$175	40%	N/A	$0.06	6	6
Idaho	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	New	1,170	10	$750	75%	N/A	$0.09	60	60
Idaho	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	298	298
Idaho	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.12	0.12
Idaho	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	164	20	$633	100%	N/A	$0.38	1,384	1,656

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Single Family	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,190	20	$125	7.0%	100%	$0.01	2,567	2,567
Idaho	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$472	100%	N/A	$0.32	0.00	0.00
Idaho	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	164	20	$633	100%	N/A	$0.38	1,219	1,227
Idaho	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	128	20	$37	100%	N/A	$0.03	0.00	0.00
Idaho	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	40	20	$16	100%	N/A	$0.04	0.00	0.00
Idaho	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	804	804
Idaho	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	290	290
Idaho	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.72	532	532
Idaho	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.72	120	120
Idaho	Single Family	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	422	20	$120	100%	N/A	$0.03	2,485	2,564
Idaho	Single Family	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	97	20	$60	100%	N/A	$0.06	0.00	0.00
Idaho	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	2,220	13	$604	100%	N/A	$0.04	1,935	2,108
Idaho	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	49	13	$361	100%	N/A	$1.40	0.00	0.00
Idaho	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	2,220	13	$604	100%	N/A	$0.04	853	805
Idaho	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	49	13	$361	100%	N/A	$1.40	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	271	14	$140	97%	72%	$-0.11	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	97	14	$58	97%	72%	$-0.39	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	472	14	$210	97%	72%	$-0.05	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	351	14	$198	97%	99%	$-0.06	2	40

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Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	178	14	$116	97%	99%	$-0.18	92	108
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	553	14	$268	97%	99%	$-0.03	4	101
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	173	14	$81	97%	89%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	375	14	$152	97%	89%	$-0.07	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	201	14	$70	97%	91%	$-0.18	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	173	14	$81	97%	91%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	67	12	$161	68%	39%	$0.28	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	13	12	$7	68%	39%	$0.03	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	118	12	$309	68%	85%	$0.32	0.00	4
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	64	12	$155	68%	85%	$0.31	26	33
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	54	12	$154	68%	35%	$0.35	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	497	40	$935	29%	90%	$0.16	108	108
Idaho	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	122	10	$5	100%	25%	$-0.04	25	25
Idaho	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	107	10	$7	75%	65%	$-0.03	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	260	10	$8	75%	95%	$-0.04	153	153
Idaho	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	343	10	$59	100%	65%	$0.00	184	184
Idaho	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	343	10	$44	100%	10%	$-0.01	28	28

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	0.80	0.80
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	13	13
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	2	2
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	12	12
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	271	14	$140	97%	72%	$-0.11	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	97	14	$58	97%	72%	$-0.39	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	472	14	$210	97%	72%	$-0.05	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	351	14	$198	97%	99%	$-0.06	0.16	9
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	178	14	$116	97%	99%	$-0.18	25	25
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	553	14	$268	97%	99%	$-0.03	0.60	19
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	173	14	$81	97%	89%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	375	14	$152	97%	89%	$-0.07	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	201	14	$70	97%	91%	$-0.18	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	173	14	$81	97%	91%	$-0.20	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	67	12	$161	68%	39%	$0.28	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	13	12	$7	68%	39%	$0.03	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	118	12	$309	68%	85%	$0.32	0.03	0.76
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	64	12	$155	68%	85%	$0.31	7	7
Idaho	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	54	12	$154	68%	35%	$0.35	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	518	40	$935	59%	90%	$0.16	24	24
Idaho	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	107	10	$7	75%	65%	$-0.03	0.00	0.00
Idaho	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	260	10	$8	75%	95%	$-0.04	41	41
Idaho	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	343	10	$59	100%	65%	$0.00	49	49
Idaho	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	343	10	$44	100%	10%	$-0.01	7	7
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	0.20	0.20
Idaho	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.53	0.53
Idaho	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,985	13	$1,136	59%	N/A	$0.08	10,488	11,845
Idaho	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	119	13	$72	100%	N/A	$0.07	0.00	71
Idaho	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,985	13	$1,136	59%	N/A	$0.08	4,895	4,614
Idaho	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	119	13	$72	100%	N/A	$0.07	0.00	20
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	271	14	$140	97%	72%	$-0.11	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	97	14	$58	97%	72%	$-0.39	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	472	14	$210	97%	72%	$-0.05	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	351	14	$198	97%	99%	$-0.06	17	504
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	178	14	$116	97%	99%	$-0.18	1,405	1,515
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	553	14	$268	97%	99%	$-0.03	45	1,206
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	173	14	$81	97%	89%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	375	14	$152	97%	89%	$-0.07	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	201	14	$70	97%	91%	$-0.18	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	173	14	$81	97%	91%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	67	12	$161	68%	39%	$0.28	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	13	12	$7	68%	39%	$0.03	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	118	12	$309	68%	85%	$0.32	0.02	48
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	64	12	$155	68%	85%	$0.31	401	445
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	54	12	$154	68%	35%	$0.35	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	483	40	$935	29%	90%	$0.17	1,599	1,599
Idaho	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	122	10	$5	100%	25%	$-0.04	382	382

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	107	10	$7	75%	65%	$-0.03	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	260	10	$8	75%	95%	$-0.04	2,317	2,317
Idaho	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	343	10	$59	100%	65%	$0.00	2,786	2,786
Idaho	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	343	10	$44	100%	10%	$-0.01	428	428
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.65	11	11
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	196	196
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	30	30
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	179	179
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	271	14	$140	97%	72%	$-0.11	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	97	14	$58	97%	72%	$-0.39	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	472	14	$210	97%	72%	$-0.05	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	351	14	$198	97%	99%	$-0.06	2	170
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	178	14	$116	97%	99%	$-0.18	458	458
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	553	14	$268	97%	99%	$-0.03	10	349
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	173	14	$81	97%	89%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	375	14	$152	97%	89%	$-0.07	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	201	14	$70	97%	91%	$-0.18	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	173	14	$81	97%	91%	$-0.20	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	67	12	$161	68%	39%	$0.28	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	13	12	$7	68%	39%	$0.03	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	118	12	$309	68%	85%	$0.32	0.64	13
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	64	12	$155	68%	85%	$0.31	137	137
Idaho	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	54	12	$154	68%	35%	$0.35	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	485	40	$935	59%	90%	$0.17	400	400
Idaho	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	107	10	$7	75%	65%	$-0.03	0.00	0.00
Idaho	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	260	10	$8	75%	95%	$-0.04	738	738
Idaho	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	343	10	$59	100%	65%	$0.00	888	888
Idaho	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	343	10	$44	100%	10%	$-0.01	136	136
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.65	3	3
Idaho	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	9	9
Utah	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.02	223	223
Utah	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.02	18	18
Utah	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$1.88	7	7
Utah	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$1.88	1	1
Utah	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	39	18	$1,585	2.5%	95%	$3.03	19	19
Utah	Manufactured	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	2	45	$315	75%	90%	$9.15	35	35

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Cool Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	27	45	$1,233	75%	35%	$3.38	147	147
Utah	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	356	15	$1,485	100%	N/A	$0.32	0.00	0.00
Utah	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	225	15	$742	100%	N/A	$0.25	0.00	0.00
Utah	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	500	15	$2,476	100%	N/A	$0.38	0.00	0.00
Utah	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,430	15	$-1729.8947	90%	N/A	$0.00	374	422
Utah	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,307	15	$-1272.421	45%	N/A	$0.00	180	203
Utah	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	25	20	$135	50%	90%	$0.40	0.15	0.15
Utah	Manufactured	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	15	18	$587	25%	75%	$2.92	58	58
Utah	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	16	5	$300	95%	65%	$1.39	206	206
Utah	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	40	30	$675	10%	90%	$1.26	70	70
Utah	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	27	11	$895	10%	95%	$2.51	48	48
Utah	Manufactured	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	12	5	$200	95%	65%	$1.21	157	157
Utah	Manufactured	Cool Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	35	45	$1,662	75%	25%	$3.56	123	123
Utah	Manufactured	Cool Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	45	45	$1,838	5.0%	50%	$3.06	20	20
Utah	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	59	20	$455	50%	95%	$0.58	577	577
Utah	Manufactured	Cool Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	75	45	$4,610	65%	25%	$4.69	202	202
Utah	Manufactured	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	4	45	$1,285	65%	25%	$24.10	0.00	0.00
Utah	Manufactured	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	12	45	$8,346	95%	75%	$50.32	145	145
Utah	Manufactured	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	12	45	$8,035	95%	95%	$49.45	0.00	0.00
Utah	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	24	18	$1,585	20%	95%	$4.95	13	13
Utah	Manufactured	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	2	45	$315	95%	90%	$11.67	4	4

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	232	15	$1,160	100%	N/A	$0.38	0.00	0.00
Utah	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	147	15	$580	100%	N/A	$0.30	0.00	0.00
Utah	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	326	15	$1,934	100%	N/A	$0.45	0.00	0.00
Utah	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	877	15	$-1329.6053	90%	N/A	$0.00	48	49
Utah	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	781	15	$-972.204	90%	N/A	$0.00	20	20
Utah	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	25	20	$135	50%	90%	$0.40	0.01	0.01
Utah	Manufactured	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	14	40	$163	75%	50%	$0.86	12	12
Utah	Manufactured	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	12	40	$19,384	5.0%	100%	$121.09	0.69	0.69
Utah	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	10	5	$300	95%	65%	$2.27	21	21
Utah	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	24	30	$480	25%	90%	$1.47	12	12
Utah	Manufactured	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.57	45	$516	20%	65%	$69.18	0.17	0.17
Utah	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	16	11	$895	20%	95%	$4.11	9	9
Utah	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	36	20	$455	50%	95%	$0.95	41	41
Utah	Manufactured	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	2	45	$1,285	95%	60%	$42.41	0.00	0.00
Utah	Manufactured	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	9	45	$8,346	95%	75%	$68.29	13	13
Utah	Manufactured	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	7	45	$8,035	95%	95%	$78.90	0.00	0.00
Utah	Manufactured	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	4	45	$315	75%	90%	$5.51	0.00	0.00
Utah	Manufactured	Cool Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	46	45	$1,233	75%	35%	$2.03	0.00	0.00
Utah	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	223	20	$1,166	50%	N/A	$0.40	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	67	30	$675	10%	90%	$0.76	0.00	0.00
Utah	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	54	9	$41	100%	N/A	$0.06	0.00	0.00
Utah	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	64	9	$308	100%	N/A	$0.37	0.00	0.00
Utah	Manufactured	Cool Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	59	45	$1,662	75%	25%	$2.14	0.00	0.00
Utah	Manufactured	Cool Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	76	45	$1,838	5.0%	50%	$1.84	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	124	45	$4,610	65%	25%	$2.82	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	6	45	$1,285	65%	25%	$14.51	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	21	45	$8,346	95%	75%	$30.30	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	20	45	$8,035	95%	95%	$29.78	0.00	0.00
Utah	Manufactured	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	4	45	$315	95%	90%	$5.41	0.00	0.00
Utah	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	101	20	$960	95%	N/A	$0.72	0.00	0.00
Utah	Manufactured	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	26	40	$19,384	5.0%	100%	$56.18	0.00	0.00
Utah	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	53	30	$480	25%	90%	$0.68	0.00	0.00
Utah	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	45	9	$41	100%	N/A	$0.07	0.00	0.00
Utah	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	53	9	$308	100%	N/A	$0.44	0.00	0.00
Utah	Manufactured	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$516	20%	65%	$32.10	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	4	45	$1,285	95%	60%	$19.67	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	20	45	$8,346	95%	75%	$31.68	0.00	0.00
Utah	Manufactured	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	16	45	$8,035	95%	95%	$36.60	0.00	0.00
Utah	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	3	3
Utah	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	1	1
Utah	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.03	45	45

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.03	6	6
Utah	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.04	0.00	0.00
Utah	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.04	0.00	0.00
Utah	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	192	11	$372	100%	N/A	$0.15	140	593
Utah	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	180	11	$343	100%	N/A	$0.14	0.00	0.00
Utah	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	47	11	$75	100%	N/A	$0.12	0.00	0.00
Utah	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	192	11	$372	100%	N/A	$0.15	29	91
Utah	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	180	11	$343	100%	N/A	$0.14	0.00	0.00
Utah	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	47	11	$75	100%	N/A	$0.12	0.00	0.00
Utah	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	129	20	$3	100%	N/A	$0.00	0.00	9
Utah	Manufactured	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	881	20	$121	17%	100%	$0.01	681	681
Utah	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	129	20	$3	100%	N/A	$0.00	0.00	2
Utah	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,079	18	$1,585	2.5%	95%	$0.11	21	21
Utah	Manufactured	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	49	45	$315	75%	90%	$0.49	27	27
Utah	Manufactured	Heat Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	531	45	$1,233	75%	35%	$0.18	114	114
Utah	Manufactured	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	203	20	$121	100%	80%	$0.05	132	132
Utah	Manufactured	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	120	20	$56	100%	60%	$0.04	0.00	0.00
Utah	Manufactured	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	234	18	$587	25%	75%	$0.19	36	36
Utah	Manufactured	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	90	45	$340	25%	85%	$0.29	14	14
Utah	Manufactured	Heat Central	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,891	45	$1,104	25%	5%	$0.04	18	18
Utah	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,290	20	$7,682	50%	N/A	$0.11	987	1,109

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	4,944	20	$6,388	0.0%	N/A	$0.10	0.00	0.00
Utah	Manufactured	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	134	11	$227	75%	50%	$0.13	40	40
Utah	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	179	30	$675	10%	90%	$0.25	12	12
Utah	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	611	11	$895	10%	95%	$0.11	45	45
Utah	Manufactured	Heat Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,998	45	$1,662	75%	25%	$0.06	299	299
Utah	Manufactured	Heat Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,598	45	$1,838	5.0%	50%	$0.05	49	49
Utah	Manufactured	Heat Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	857	45	$4,610	65%	25%	$0.41	102	102
Utah	Manufactured	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	135	45	$1,285	65%	25%	$0.72	0.00	0.00
Utah	Manufactured	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	234	45	$8,346	95%	75%	$2.72	0.00	0.00
Utah	Manufactured	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	338	45	$8,035	95%	95%	$1.81	221	221
Utah	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	560	18	$1,585	20%	95%	$0.21	10	10
Utah	Manufactured	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	89	45	$315	95%	90%	$0.27	6	6
Utah	Manufactured	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	396	20	$121	100%	80%	$0.02	24	24
Utah	Manufactured	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	235	20	$56	100%	60%	$0.02	0.00	0.00
Utah	Manufactured	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	339	40	$163	75%	50%	$0.04	10	10
Utah	Manufactured	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	137	45	$340	75%	85%	$0.19	6	6
Utah	Manufactured	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	233	40	$19,384	5.0%	100%	$6.12	0.40	0.40
Utah	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	2,742	20	$5,125	50%	N/A	$0.14	110	111
Utah	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	2,571	20	$4,114	0.0%	N/A	$0.12	0.00	0.00
Utah	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	93	30	$480	25%	90%	$0.33	1	1
Utah	Manufactured	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	22	45	$516	20%	65%	$1.71	0.21	0.21
Utah	Manufactured	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	840	20	$587	0.0%	95%	$0.05	0.00	0.00
Utah	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	317	11	$895	20%	95%	$0.21	5	5

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Heat Central	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	418	45	$1,061	50%	95%	$0.19	14	14
Utah	Manufactured	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	239	45	$1,285	95%	60%	$0.41	0.00	0.00
Utah	Manufactured	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	428	45	$8,346	95%	75%	$1.49	0.00	0.00
Utah	Manufactured	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	598	45	$8,035	95%	95%	$1.02	34	34
Utah	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	289	18	$1,585	2.5%	95%	$0.42	0.00	0.00
Utah	Manufactured	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	23	45	$315	75%	90%	$1.03	0.00	0.00
Utah	Manufactured	Heat Pump	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	251	45	$1,233	75%	35%	$0.37	0.00	0.00
Utah	Manufactured	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	68	20	$121	100%	80%	$0.13	0.00	0.00
Utah	Manufactured	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	40	20	$56	100%	60%	$0.11	0.00	0.00
Utah	Manufactured	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	120	18	$587	25%	75%	$0.37	0.00	0.00
Utah	Manufactured	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	23	45	$340	25%	85%	$1.11	0.00	0.00
Utah	Manufactured	Heat Pump	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	537	45	$1,104	25%	5%	$0.16	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	345	20	$1,294	100%	N/A	$0.29	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	210	20	$970	100%	N/A	$0.35	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	551	20	$1,941	100%	N/A	$0.27	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	183	20	$647	100%	N/A	$0.27	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	771	20	$8,245	2.5%	N/A	$0.82	0.00	0.00
Utah	Manufactured	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	34	11	$227	75%	50%	$0.50	0.00	0.00
Utah	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	103	5	$300	95%	65%	$0.22	0.00	0.00
Utah	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	22	30	$675	10%	90%	$2.25	0.00	0.00
Utah	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	291	11	$895	10%	95%	$0.23	0.00	0.00
Utah	Manufactured	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	79	5	$200	20%	75%	$0.19	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Heat Pump	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	768	45	$1,662	75%	25%	$0.17	0.00	0.00
Utah	Manufactured	Heat Pump	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,003	45	$1,838	5.0%	50%	$0.14	0.00	0.00
Utah	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	39	20	$455	50%	95%	$0.89	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	476	45	$4,610	65%	25%	$0.74	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	56	45	$1,285	65%	25%	$1.74	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	110	45	$8,346	95%	75%	$5.78	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	145	45	$8,035	95%	95%	$4.20	0.00	0.00
Utah	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	117	18	$1,585	20%	95%	$1.03	0.00	0.00
Utah	Manufactured	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	30	45	$315	95%	90%	$0.79	0.00	0.00
Utah	Manufactured	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	97	20	$121	100%	80%	$0.09	0.00	0.00
Utah	Manufactured	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	58	20	$56	100%	60%	$0.07	0.00	0.00
Utah	Manufactured	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	140	40	$163	75%	50%	$0.09	0.00	0.00
Utah	Manufactured	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	28	45	$340	75%	85%	$0.93	0.00	0.00
Utah	Manufactured	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	104	40	$19,384	5.0%	100%	$14.18	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	170	20	$1,011	100%	N/A	$0.45	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	100	20	$758	100%	N/A	$0.58	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	277	20	$1,516	100%	N/A	$0.42	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	90	20	$505	100%	N/A	$0.43	0.00	0.00
Utah	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	218	20	$6,543	5.0%	N/A	$2.29	0.00	0.00
Utah	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	56	5	$300	95%	65%	$0.41	0.00	0.00
Utah	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	12	30	$480	25%	90%	$2.86	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	8	45	$516	20%	65%	$4.87	0.00	0.00
Utah	Manufactured	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	201	20	$587	0.0%	95%	$0.22	0.00	0.00
Utah	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	141	11	$895	20%	95%	$0.48	0.00	0.00
Utah	Manufactured	Heat Pump	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	116	45	$1,061	50%	95%	$0.69	0.00	0.00
Utah	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	23	20	$455	50%	95%	$1.47	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	70	45	$1,285	95%	60%	$1.38	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	145	45	$8,346	95%	75%	$4.37	0.00	0.00
Utah	Manufactured	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	184	45	$8,035	95%	95%	$3.33	0.00	0.00
Utah	Manufactured	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	44	45	$315	75%	90%	$0.54	0.00	0.00
Utah	Manufactured	Heat Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	479	45	$1,233	75%	35%	$0.20	0.00	0.00
Utah	Manufactured	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	183	20	$121	100%	80%	$0.05	0.00	0.00
Utah	Manufactured	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	108	20	$56	100%	60%	$0.04	0.00	0.00
Utah	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,014	20	$1,166	50%	N/A	$0.04	0.00	0.00
Utah	Manufactured	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	82	45	$340	25%	85%	$0.32	0.00	0.00
Utah	Manufactured	Heat Room	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,706	45	$1,104	25%	5%	$0.05	0.00	0.00
Utah	Manufactured	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	121	11	$227	75%	50%	$0.14	0.00	0.00
Utah	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	162	30	$675	10%	90%	$0.27	0.00	0.00
Utah	Manufactured	Heat Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,803	45	$1,662	75%	25%	$0.07	0.00	0.00
Utah	Manufactured	Heat Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,345	45	$1,838	5.0%	50%	$0.06	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	774	45	$4,610	65%	25%	$0.45	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	122	45	$1,285	65%	25%	$0.80	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	211	45	$8,346	95%	75%	$3.01	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	305	45	$8,035	95%	95%	$2.01	0.00	0.00
Utah	Manufactured	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	82	45	$315	95%	90%	$0.29	0.00	0.00
Utah	Manufactured	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	367	20	$121	100%	80%	$0.03	0.00	0.00
Utah	Manufactured	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	218	20	$56	100%	60%	$0.02	0.00	0.00
Utah	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,014	20	$1,000	95%	N/A	$0.04	0.00	0.00
Utah	Manufactured	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	127	45	$340	75%	85%	$0.20	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	216	40	$19,384	5.0%	100%	$6.59	0.00	0.00
Utah	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	86	30	$480	25%	90%	$0.35	0.00	0.00
Utah	Manufactured	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	21	45	$516	20%	65%	$1.85	0.00	0.00
Utah	Manufactured	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	779	20	$587	0.0%	95%	$0.06	0.00	0.00
Utah	Manufactured	Heat Room	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	387	45	$1,061	50%	95%	$0.21	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	221	45	$1,285	95%	60%	$0.44	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	397	45	$8,346	95%	75%	$1.60	0.00	0.00
Utah	Manufactured	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	554	45	$8,035	95%	95%	$1.11	0.00	0.00
Utah	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.37	131	131
Utah	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.37	6	6
Utah	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	26	7	$1	45%	N/A	$0.01	90	90
Utah	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	28	12	$37	55%	N/A	$0.10	1,128	1,128
Utah	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	26	7	$1	45%	N/A	$0.01	16	16
Utah	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	28	12	$37	55%	N/A	$0.10	175	175
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	100%	N/A	$0.00	0.00	0.00
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	85%	N/A	$0.01	0.00	2,956
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	30	12	$21	15%	N/A	$0.05	43	1,508
Utah	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	5	10	$60	2.5%	95%	$0.91	18	18
Utah	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	10%	95%	$1.54	48	48
Utah	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$1.54	9	9
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	100%	N/A	$0.00	0.00	0.00

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Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	85%	N/A	$0.01	0.00	234
Utah	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	30	12	$21	15%	N/A	$0.05	43	128
Utah	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	5	10	$60	2.5%	95%	$0.91	2	2
Utah	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	10%	95%	$1.54	7	7
Utah	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$1.54	1	1
Utah	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.02	329	329
Utah	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.02	70	70
Utah	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	18	18
Utah	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	11	11
Utah	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.03	11	11
Utah	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.02	307	307
Utah	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.03	1	1
Utah	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.02	48	48
Utah	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	132	132
Utah	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.02	0.02
Utah	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	196	20	$633	100%	N/A	$0.25	1,148	1,163
Utah	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	153	20	$37	100%	N/A	$0.02	0.00	0.00
Utah	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Manufactured	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,214	20	$121	0.0%	100%	$0.01	0.00	0.00
Utah	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	196	20	$633	100%	N/A	$0.25	300	304
Utah	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	153	20	$37	100%	N/A	$0.02	0.00	0.00

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Utah	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.00	241	241
Utah	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.00	37	37
Utah	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.24	272	272
Utah	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.24	26	26
Utah	Manufactured	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	157	20	$120	100%	N/A	$0.06	834	868
Utah	Manufactured	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	38	20	$60	100%	N/A	$0.12	0.00	0.00
Utah	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,473	13	$604	100%	N/A	$0.03	290	313
Utah	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	32	13	$361	100%	N/A	$0.84	0.00	0.00
Utah	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,473	13	$604	100%	N/A	$0.03	54	51
Utah	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	32	13	$361	100%	N/A	$0.84	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	209	14	$140	90%	90%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	74	14	$58	90%	90%	$0.06	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	364	14	$210	90%	90%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	271	14	$198	90%	95%	$0.06	0.00	5
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$116	90%	95%	$0.06	14	17
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	427	14	$268	90%	95%	$0.05	0.00	14
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$81	90%	85%	$0.05	0.00	0.00

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Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	289	14	$152	90%	85%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	155	14	$70	90%	85%	$0.03	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	50	12	$161	33%	50%	$0.24	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	33%	50%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	89	12	$309	33%	85%	$0.27	0.00	0.35
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	48	12	$155	33%	85%	$0.25	2	2
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	40	12	$154	33%	35%	$0.29	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	329	40	$935	29%	90%	$0.22	14	14
Utah	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	64	10	$5	100%	25%	$0.01	2	2
Utah	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	56	10	$7	66%	65%	$0.01	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	136	10	$8	66%	95%	$0.00	14	14
Utah	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	216	10	$50	100%	65%	$0.02	23	23
Utah	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	216	10	$37	100%	10%	$0.01	3	3
Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	0.16	0.16
Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	2	2
Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	0.43	0.43

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Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	2	2
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	209	14	$140	90%	90%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	74	14	$58	90%	90%	$0.06	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	364	14	$210	90%	90%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	271	14	$198	90%	95%	$0.06	0.00	0.59
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$116	90%	95%	$0.06	1	1
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	427	14	$268	90%	95%	$0.05	0.00	1
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	289	14	$152	90%	85%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	155	14	$70	90%	85%	$0.03	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	50	12	$161	33%	50%	$0.24	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	33%	50%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	89	12	$309	33%	85%	$0.27	0.00	0.03
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	48	12	$155	33%	85%	$0.25	0.25	0.25

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	40	12	$154	33%	35%	$0.29	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	343	40	$935	59%	90%	$0.21	1	1
Utah	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	56	10	$7	66%	65%	$0.01	0.00	0.00
Utah	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	136	10	$8	66%	95%	$0.00	1	1
Utah	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	216	10	$50	100%	65%	$0.02	2	2
Utah	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	216	10	$37	100%	10%	$0.01	0.44	0.44
Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	0.02	0.02
Utah	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	0.05	0.05
Utah	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,316	13	$1,136	59%	N/A	$0.07	1,629	1,816
Utah	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	79	13	$72	100%	N/A	$0.07	0.00	13
Utah	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,316	13	$1,136	59%	N/A	$0.07	315	297
Utah	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	79	13	$72	100%	N/A	$0.07	0.00	1
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	209	14	$140	90%	90%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	74	14	$58	90%	90%	$0.06	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	364	14	$210	90%	90%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	271	14	$198	90%	95%	$0.06	0.00	70
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$116	90%	95%	$0.06	221	238

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	427	14	$268	90%	95%	$0.05	0.00	176
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	289	14	$152	90%	85%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	155	14	$70	90%	85%	$0.03	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	50	12	$161	33%	50%	$0.24	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	33%	50%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	89	12	$309	33%	85%	$0.27	0.00	4
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	48	12	$155	33%	85%	$0.25	32	36
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	40	12	$154	33%	35%	$0.29	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	322	40	$935	29%	90%	$0.22	214	214
Utah	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	64	10	$5	100%	25%	$0.01	40	40
Utah	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	56	10	$7	66%	65%	$0.01	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	136	10	$8	66%	95%	$0.00	215	215
Utah	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	216	10	$50	100%	65%	$0.02	352	352
Utah	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	216	10	$37	100%	10%	$0.01	54	54
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	2	2

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	41	41
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	6	6
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	37	37
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	209	14	$140	90%	90%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	74	14	$58	90%	90%	$0.06	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	364	14	$210	90%	90%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	271	14	$198	90%	95%	$0.06	0.00	10
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$116	90%	95%	$0.06	28	28
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	427	14	$268	90%	95%	$0.05	0.00	28
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	289	14	$152	90%	85%	$0.04	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	155	14	$70	90%	85%	$0.03	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	134	14	$81	90%	85%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	50	12	$161	33%	50%	$0.24	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	33%	50%	$0.05	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	89	12	$309	33%	85%	$0.27	0.00	0.67
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	48	12	$155	33%	85%	$0.25	4	4
Utah	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	40	12	$154	33%	35%	$0.29	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	321	40	$935	59%	90%	$0.22	21	21
Utah	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	56	10	$7	66%	65%	$0.01	0.00	0.00
Utah	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	136	10	$8	66%	95%	$0.00	31	31
Utah	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	216	10	$50	100%	65%	$0.02	51	51
Utah	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	216	10	$37	100%	10%	$0.01	7	7
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	0.34	0.34
Utah	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	0.90	0.90
Utah	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.02	1,685	1,685
Utah	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.02	140	140
Utah	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$1.88	140	140
Utah	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$1.88	35	35
Utah	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	179	18	$1,585	2.5%	95%	$0.67	425	425
Utah	Multifamily	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	6	45	$206	95%	90%	$2.53	527	527
Utah	Multifamily	Cool Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	68	45	$806	75%	35%	$0.90	1,772	1,772
Utah	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	405	15	$1,996	100%	N/A	$0.38	0.00	0.00
Utah	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	256	15	$998	100%	N/A	$0.30	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	569	15	$3,327	100%	N/A	$0.45	16,470	18,005
Utah	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,552	15	$-2358.921	21%	N/A	$0.00	4,520	4,941
Utah	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,387	15	$-1744.1908	10%	N/A	$0.00	9,239	10,100
Utah	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	17	20	$89	50%	90%	$0.40	0.76	0.76
Utah	Multifamily	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	54	18	$767	25%	75%	$1.07	1,020	1,020
Utah	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	74	5	$300	95%	65%	$0.31	4,557	4,557
Utah	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	183	30	$675	5.0%	90%	$0.28	784	784
Utah	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	122	11	$895	5.0%	95%	$0.56	549	549
Utah	Multifamily	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	56	5	$200	95%	65%	$0.27	3,488	3,488
Utah	Multifamily	Cool Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	151	45	$1,900	75%	25%	$0.96	2,616	2,616
Utah	Multifamily	Cool Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	193	45	$2,102	5.0%	50%	$0.83	438	438
Utah	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	269	20	$455	10%	95%	$0.13	2,552	2,552
Utah	Multifamily	Cool Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	408	45	$6,027	65%	25%	$1.13	5,911	5,911
Utah	Multifamily	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	23	45	$1,679	95%	60%	$5.55	0.00	0.00
Utah	Multifamily	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	72	45	$10,910	95%	75%	$11.52	4,418	4,418
Utah	Multifamily	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	70	45	$10,503	95%	95%	$11.37	0.00	0.00
Utah	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	107	18	$1,585	20%	95%	$1.13	241	241
Utah	Multifamily	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	5	45	$206	75%	90%	$2.80	38	38
Utah	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	262	15	$1,253	100%	N/A	$0.36	0.00	0.00
Utah	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	167	15	$626	100%	N/A	$0.29	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	367	15	$2,089	100%	N/A	$0.43	1,988	2,011
Utah	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	1,003	15	$-1443.9737	21%	N/A	$0.00	626	633
Utah	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	899	15	$-1057.9803	21%	N/A	$0.00	2,736	2,767
Utah	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	17	20	$89	50%	90%	$0.40	0.05	0.05
Utah	Multifamily	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	56	40	$213	75%	50%	$0.29	202	202
Utah	Multifamily	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	53	40	$12,908	10%	100%	$18.39	24	24
Utah	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	44	5	$300	95%	65%	$0.52	372	372
Utah	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	109	30	$480	15%	90%	$0.33	131	131
Utah	Multifamily	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$337	20%	65%	$17.46	1	1
Utah	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	72	11	$895	10%	95%	$0.94	86	86
Utah	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	160	20	$455	10%	95%	$0.22	146	146
Utah	Multifamily	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	13	45	$1,679	95%	60%	$9.48	0.00	0.00
Utah	Multifamily	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	50	45	$10,910	95%	75%	$16.53	308	308
Utah	Multifamily	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	44	45	$10,503	95%	95%	$18.15	0.00	0.00
Utah	Multifamily	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	1	45	$206	95%	90%	$8.07	55	55
Utah	Multifamily	Cool Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	21	45	$806	75%	35%	$2.87	185	185
Utah	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	40	20	$1,166	50%	N/A	$2.21	0.00	0.00
Utah	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	57	30	$675	5.0%	90%	$0.89	84	84
Utah	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	46	9	$41	100%	N/A	$0.07	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	54	9	$308	100%	N/A	$0.43	0.00	106
Utah	Multifamily	Cool Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	47	45	$1,900	75%	25%	$3.06	289	289
Utah	Multifamily	Cool Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	60	45	$2,102	5.0%	50%	$2.65	48	48
Utah	Multifamily	Cool Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	128	45	$6,027	65%	25%	$3.59	665	665
Utah	Multifamily	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	7	45	$1,679	95%	60%	$17.70	0.00	0.00
Utah	Multifamily	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	22	45	$10,910	95%	75%	$36.72	497	497
Utah	Multifamily	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	22	45	$10,503	95%	95%	$36.24	0.00	0.00
Utah	Multifamily	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	2	45	$206	75%	90%	$5.49	6	6
Utah	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	141	20	$960	95%	N/A	$0.52	302	304
Utah	Multifamily	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	27	40	$12,908	10%	100%	$36.02	4	4
Utah	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	55	30	$480	15%	90%	$0.66	24	24
Utah	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	47	9	$41	100%	N/A	$0.07	0.00	0.00
Utah	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	55	9	$308	100%	N/A	$0.42	0.00	0.00
Utah	Multifamily	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.75	45	$337	20%	65%	$34.20	0.33	0.33
Utah	Multifamily	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	6	45	$1,679	95%	60%	$18.57	0.00	0.00
Utah	Multifamily	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	25	45	$10,910	95%	75%	$32.38	57	57
Utah	Multifamily	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	22	45	$10,503	95%	95%	$35.55	0.00	0.00
Utah	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.03	446	446
Utah	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.03	63	63
Utah	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.04	445	445
Utah	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.04	86	86

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Utah	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	167	11	$372	100%	N/A	$0.17	1,024	4,322
Utah	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	157	11	$343	100%	N/A	$0.17	0.00	0.00
Utah	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	41	11	$75	100%	N/A	$0.14	0.00	0.00
Utah	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	167	11	$372	100%	N/A	$0.17	218	664
Utah	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	157	11	$343	100%	N/A	$0.17	0.00	0.00
Utah	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	41	11	$75	100%	N/A	$0.14	0.00	0.00
Utah	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	129	20	$3	100%	N/A	$0.00	0.00	60
Utah	Multifamily	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	881	20	$121	17%	100%	$0.01	4,237	4,237
Utah	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	129	20	$3	100%	N/A	$0.00	0.00	14
Utah	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,223	18	$1,585	2.5%	95%	$0.09	307	307
Utah	Multifamily	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	19	45	$206	95%	90%	$0.82	173	173
Utah	Multifamily	Heat Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	216	45	$806	75%	35%	$0.28	599	599
Utah	Multifamily	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	465	20	$243	100%	80%	$0.04	3,903	3,903
Utah	Multifamily	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	273	20	$112	100%	60%	$0.03	0.00	0.00
Utah	Multifamily	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	171	18	$767	25%	75%	$0.34	339	339
Utah	Multifamily	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	50	45	$222	25%	85%	$0.34	102	102
Utah	Multifamily	Heat Central	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,199	45	$721	25%	5%	$0.05	144	144
Utah	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	6,070	20	$10,323	5.0%	N/A	$0.13	1,134	1,323
Utah	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,673	20	$8,584	0.0%	N/A	$0.12	0.00	0.00
Utah	Multifamily	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	248	11	$297	75%	50%	$0.09	969	969
Utah	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	203	30	$675	5.0%	90%	$0.13	91	91

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Utah	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	693	11	$895	5.0%	95%	$0.08	326	326
Utah	Multifamily	Heat Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,520	45	$1,900	75%	25%	$0.06	4,825	4,825
Utah	Multifamily	Heat Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,272	45	$2,102	5.0%	50%	$0.05	794	794
Utah	Multifamily	Heat Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,305	45	$6,027	65%	25%	$0.35	1,982	1,982
Utah	Multifamily	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	212	45	$1,679	95%	60%	$0.60	0.00	0.00
Utah	Multifamily	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	368	45	$10,910	95%	75%	$2.26	0.00	0.00
Utah	Multifamily	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	531	45	$10,503	95%	95%	$1.51	4,384	4,384
Utah	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	743	18	$1,585	20%	95%	$0.14	204	204
Utah	Multifamily	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	33	45	$206	75%	90%	$0.47	27	27
Utah	Multifamily	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	277	45	$3,293	5.0%	95%	$0.91	15	15
Utah	Multifamily	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	193	45	$3,350	5.0%	95%	$1.32	0.00	0.00
Utah	Multifamily	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	800	20	$243	100%	80%	$0.02	720	720
Utah	Multifamily	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	475	20	$112	100%	60%	$0.02	0.00	0.00
Utah	Multifamily	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	214	40	$213	75%	50%	$0.06	94	94
Utah	Multifamily	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	72	45	$222	75%	85%	$0.23	47	47
Utah	Multifamily	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	309	40	$12,908	10%	100%	$2.71	15	15
Utah	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,677	20	$5,535	5.0%	N/A	$0.11	158	160
Utah	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,463	20	$4,443	0.0%	N/A	$0.10	0.00	0.00
Utah	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	123	30	$480	15%	90%	$0.16	16	16
Utah	Multifamily	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	27	45	$337	20%	65%	$0.89	3	3
Utah	Multifamily	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,579	20	$767	0.0%	95%	$0.04	0.00	0.00
Utah	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	421	11	$895	10%	95%	$0.14	56	56
Utah	Multifamily	Heat Central	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	456	45	$1,213	50%	95%	$0.20	235	235
Utah	Multifamily	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	315	45	$1,679	95%	60%	$0.41	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	553	45	$10,910	95%	75%	$1.50	0.00	0.00
Utah	Multifamily	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	786	45	$10,503	95%	95%	$1.02	674	674
Utah	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	319	18	$1,585	2.5%	95%	$0.38	0.00	0.00
Utah	Multifamily	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	10	45	$206	95%	90%	$1.51	0.00	0.00
Utah	Multifamily	Heat Pump	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	116	45	$806	75%	35%	$0.53	0.00	0.00
Utah	Multifamily	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	152	20	$243	100%	80%	$0.12	0.00	0.00
Utah	Multifamily	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	89	20	$112	100%	60%	$0.10	0.00	0.00
Utah	Multifamily	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	87	18	$767	25%	75%	$0.67	0.00	0.00
Utah	Multifamily	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	12	45	$222	25%	85%	$1.38	0.00	0.00
Utah	Multifamily	Heat Pump	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	315	45	$721	25%	5%	$0.17	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	397	20	$1,739	100%	N/A	$0.33	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	246	20	$1,304	100%	N/A	$0.40	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	627	20	$2,608	100%	N/A	$0.32	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	205	20	$869	100%	N/A	$0.32	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	831	20	$11,079	13%	N/A	$1.02	0.00	0.00
Utah	Multifamily	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	82	11	$297	75%	50%	$0.27	0.00	0.00
Utah	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	117	5	$300	95%	65%	$0.20	0.00	0.00
Utah	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	25	30	$675	5.0%	90%	$1.99	0.00	0.00
Utah	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	326	11	$895	5.0%	95%	$0.21	0.00	0.00
Utah	Multifamily	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	89	5	$200	20%	75%	$0.17	0.00	0.00
Utah	Multifamily	Heat Pump	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	933	45	$1,900	75%	25%	$0.16	0.00	0.00

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Utah	Multifamily	Heat Pump	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,216	45	$2,102	5.0%	50%	$0.13	0.00	0.00
Utah	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	44	20	$455	10%	95%	$0.78	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	707	45	$6,027	65%	25%	$0.65	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	86	45	$1,679	95%	60%	$1.48	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	170	45	$10,910	95%	75%	$4.89	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	223	45	$10,503	95%	95%	$3.58	0.00	0.00
Utah	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	174	18	$1,585	20%	95%	$0.69	0.00	0.00
Utah	Multifamily	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	14	45	$206	75%	90%	$1.12	0.00	0.00
Utah	Multifamily	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	80	45	$3,293	5.0%	95%	$3.11	0.00	0.00
Utah	Multifamily	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	58	45	$3,350	5.0%	95%	$4.40	0.00	0.00
Utah	Multifamily	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	207	20	$243	100%	80%	$0.09	0.00	0.00
Utah	Multifamily	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	122	20	$112	100%	60%	$0.07	0.00	0.00
Utah	Multifamily	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	99	40	$213	75%	50%	$0.16	0.00	0.00
Utah	Multifamily	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	14	45	$222	75%	85%	$1.14	0.00	0.00
Utah	Multifamily	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	135	40	$12,908	10%	100%	$7.25	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	214	20	$1,091	100%	N/A	$0.39	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	122	20	$818	100%	N/A	$0.51	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	354	20	$1,637	100%	N/A	$0.35	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	109	20	$545	100%	N/A	$0.38	0.00	0.00
Utah	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	430	20	$7,067	25%	N/A	$1.25	0.00	0.00
Utah	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	68	5	$300	95%	65%	$0.34	0.00	0.00
Utah	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	15	30	$480	15%	90%	$2.42	0.00	0.00

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Utah	Multifamily	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	8	45	$337	20%	65%	$2.95	0.00	0.00
Utah	Multifamily	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	426	20	$767	0.0%	95%	$0.14	0.00	0.00
Utah	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	184	11	$895	10%	95%	$0.37	0.00	0.00
Utah	Multifamily	Heat Pump	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	133	45	$1,213	50%	95%	$0.69	0.00	0.00
Utah	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	26	20	$455	10%	95%	$1.30	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	97	45	$1,679	95%	60%	$1.31	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	197	45	$10,910	95%	75%	$4.22	0.00	0.00
Utah	Multifamily	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	254	45	$10,503	95%	95%	$3.15	0.00	0.00
Utah	Multifamily	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	18	45	$206	95%	90%	$0.86	240	240
Utah	Multifamily	Heat Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	205	45	$806	75%	35%	$0.30	831	831
Utah	Multifamily	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	440	20	$243	100%	80%	$0.04	5,405	5,405
Utah	Multifamily	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	258	20	$112	100%	60%	$0.03	0.00	0.00
Utah	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,632	20	$1,166	50%	N/A	$0.03	7,906	9,076
Utah	Multifamily	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	47	45	$222	25%	85%	$0.36	149	149
Utah	Multifamily	Heat Room	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,135	45	$721	25%	5%	$0.05	209	209
Utah	Multifamily	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	235	11	$297	75%	50%	$0.10	1,301	1,301
Utah	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	193	30	$675	5.0%	90%	$0.14	126	126
Utah	Multifamily	Heat Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,386	45	$1,900	75%	25%	$0.06	6,529	6,529
Utah	Multifamily	Heat Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,098	45	$2,102	5.0%	50%	$0.05	1,077	1,077
Utah	Multifamily	Heat Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,236	45	$6,027	65%	25%	$0.37	2,773	2,773
Utah	Multifamily	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	201	45	$1,679	95%	60%	$0.64	0.00	0.00
Utah	Multifamily	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	348	45	$10,910	95%	75%	$2.39	0.00	0.00
Utah	Multifamily	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	502	45	$10,503	95%	95%	$1.59	6,133	6,133
Utah	Multifamily	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	32	45	$206	75%	90%	$0.49	25	25
Utah	Multifamily	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	266	45	$3,293	5.0%	95%	$0.94	13	13
Utah	Multifamily	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	185	45	$3,350	5.0%	95%	$1.38	0.00	0.00
Utah	Multifamily	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	769	20	$243	100%	80%	$0.02	670	670
Utah	Multifamily	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	456	20	$112	100%	60%	$0.02	0.00	0.00

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Utah	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,632	20	$1,000	95%	N/A	$0.03	3,542	3,567
Utah	Multifamily	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	70	45	$222	75%	85%	$0.24	46	46
Utah	Multifamily	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	297	40	$12,908	10%	100%	$2.81	14	14
Utah	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	118	30	$480	15%	90%	$0.16	15	15
Utah	Multifamily	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	26	45	$337	20%	65%	$0.92	3	3
Utah	Multifamily	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,517	20	$767	0.0%	95%	$0.04	0.00	0.00
Utah	Multifamily	Heat Room	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	438	45	$1,213	50%	95%	$0.21	217	217
Utah	Multifamily	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	303	45	$1,679	95%	60%	$0.42	0.00	0.00
Utah	Multifamily	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	532	45	$10,910	95%	75%	$1.56	0.00	0.00
Utah	Multifamily	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	755	45	$10,503	95%	95%	$1.06	634	634
Utah	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.37	1,030	1,030
Utah	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.37	51	51
Utah	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	26	7	$1	45%	N/A	$0.01	1,000	1,000
Utah	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	28	12	$37	55%	N/A	$0.10	12,412	12,412
Utah	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	26	7	$1	45%	N/A	$0.01	181	181
Utah	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	28	12	$37	55%	N/A	$0.10	1,928	1,928
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	85%	N/A	$0.01	0.00	32,521
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	30	12	$21	15%	N/A	$0.05	495	16,604
Utah	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	5	10	$60	2.5%	95%	$0.91	200	200
Utah	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	5.0%	95%	$1.54	266	266
Utah	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$1.54	106	106
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.01	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	85%	N/A	$0.01	0.00	2,584
Utah	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	30	12	$21	15%	N/A	$0.05	479	1,425
Utah	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	5	10	$60	2.5%	95%	$0.91	32	32
Utah	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	5.0%	95%	$1.54	42	43
Utah	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$1.54	17	17
Utah	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.02	2,728	2,728
Utah	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.02	580	580
Utah	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	126	126
Utah	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	77	77
Utah	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.03	92	92
Utah	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.02	2,585	2,585
Utah	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.03	14	14
Utah	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.02	411	411
Utah	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	693	693
Utah	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.12	0.12
Utah	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	196	20	$633	100%	N/A	$0.25	9,439	9,857
Utah	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	153	20	$37	100%	N/A	$0.02	0.00	0.00
Utah	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Multifamily	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,214	20	$121	1.7%	100%	$0.01	2,486	2,486
Utah	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	196	20	$633	100%	N/A	$0.25	2,590	2,626

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Utah	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	153	20	$37	100%	N/A	$0.02	0.00	0.00
Utah	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.00	2,586	2,586
Utah	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.00	400	400
Utah	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.24	1,849	1,849
Utah	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.24	179	179
Utah	Multifamily	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	205	20	$120	100%	N/A	$0.04	7,731	8,052
Utah	Multifamily	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	50	20	$60	100%	N/A	$0.09	0.00	0.00
Utah	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,284	13	$604	100%	N/A	$0.04	2,911	3,144
Utah	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	28	13	$361	100%	N/A	$0.97	0.00	0.00
Utah	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,284	13	$604	100%	N/A	$0.04	557	541
Utah	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	28	13	$361	100%	N/A	$0.97	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	182	14	$140	52%	95%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	65	14	$58	52%	95%	$0.07	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	318	14	$210	52%	95%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	237	14	$198	52%	99%	$0.06	0.00	34
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	119	14	$116	52%	99%	$0.07	88	103
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	372	14	$268	52%	99%	$0.06	0.00	88
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	117	14	$81	52%	90%	$0.05	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	252	14	$152	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	135	14	$70	52%	90%	$0.04	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	44	12	$161	33%	50%	$0.28	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$7	33%	50%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	77	12	$309	33%	85%	$0.30	0.00	3
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	42	12	$155	33%	85%	$0.28	21	26
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	35	12	$154	33%	35%	$0.33	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	287	40	$935	29%	90%	$0.25	144	144
Utah	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	56	10	$3	100%	25%	$0.00	26	26
Utah	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	49	10	$4	50%	65%	$0.01	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	119	10	$5	50%	95%	$0.00	107	107
Utah	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	188	10	$39	100%	65%	$0.02	232	232
Utah	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	188	10	$29	100%	10%	$0.01	35	35
Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	2	2
Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	38	38
Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	6	6

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Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	35	35
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	182	14	$140	52%	95%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	65	14	$58	52%	95%	$0.07	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	318	14	$210	52%	95%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	237	14	$198	52%	99%	$0.06	0.00	3
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	119	14	$116	52%	99%	$0.07	9	9
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	372	14	$268	52%	99%	$0.06	0.00	9
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	252	14	$152	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	135	14	$70	52%	90%	$0.04	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	44	12	$161	33%	50%	$0.28	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$7	33%	50%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	77	12	$309	33%	85%	$0.30	0.00	0.37
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	42	12	$155	33%	85%	$0.28	2	2

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	35	12	$154	33%	35%	$0.33	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	299	40	$935	59%	90%	$0.24	12	12
Utah	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	49	10	$4	50%	65%	$0.01	0.00	0.00
Utah	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	119	10	$5	50%	95%	$0.00	13	13
Utah	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	188	10	$39	100%	65%	$0.02	28	28
Utah	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	188	10	$29	100%	10%	$0.01	4	4
Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	0.27	0.27
Utah	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	0.73	0.73
Utah	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,148	13	$1,136	0.0%	N/A	$0.08	0.00	0.00
Utah	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	68	13	$72	100%	N/A	$0.08	0.00	341
Utah	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,148	13	$1,136	0.0%	N/A	$0.08	0.00	0.00
Utah	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	68	13	$72	100%	N/A	$0.08	0.00	47
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	182	14	$140	52%	95%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	65	14	$58	52%	95%	$0.07	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	318	14	$210	52%	95%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	237	14	$198	52%	99%	$0.06	0.00	467
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	119	14	$116	52%	99%	$0.07	1,761	1,772

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Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	372	14	$268	52%	99%	$0.06	0.00	1,106
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	252	14	$152	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	135	14	$70	52%	90%	$0.04	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	44	12	$161	33%	50%	$0.28	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$7	33%	50%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	77	12	$309	33%	85%	$0.30	0.00	42
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	42	12	$155	33%	85%	$0.28	427	431
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	35	12	$154	33%	35%	$0.33	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	281	40	$935	29%	90%	$0.25	2,815	2,815
Utah	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	56	10	$3	100%	25%	$0.00	531	531
Utah	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	49	10	$4	50%	65%	$0.01	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	119	10	$5	50%	95%	$0.00	2,144	2,144
Utah	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	188	10	$39	100%	65%	$0.02	4,638	4,638
Utah	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	188	10	$29	100%	10%	$0.01	713	713
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	46	46

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	765	765
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	119	119
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	694	694
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	182	14	$140	52%	95%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	65	14	$58	52%	95%	$0.07	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	318	14	$210	52%	95%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	237	14	$198	52%	99%	$0.06	0.00	92
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	119	14	$116	52%	99%	$0.07	245	245
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	372	14	$268	52%	99%	$0.06	0.00	244
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	252	14	$152	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	135	14	$70	52%	90%	$0.04	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	117	14	$81	52%	90%	$0.05	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	44	12	$161	33%	50%	$0.28	0.00	0.00

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Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$7	33%	50%	$0.06	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	77	12	$309	33%	85%	$0.30	0.00	9
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	42	12	$155	33%	85%	$0.28	66	66
Utah	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	35	12	$154	33%	35%	$0.33	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	280	40	$935	59%	90%	$0.25	313	313
Utah	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	49	10	$4	50%	65%	$0.01	0.00	0.00
Utah	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	119	10	$5	50%	95%	$0.00	339	339
Utah	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	188	10	$39	100%	65%	$0.02	734	734
Utah	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	188	10	$29	100%	10%	$0.01	113	113
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	7	7
Utah	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	18	18
Utah	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.02	8,350	8,350
Utah	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.02	695	695
Utah	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$1.88	361	361
Utah	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$1.88	91	91
Utah	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	196	18	$1,585	13%	95%	$0.62	7,868	7,868
Utah	Single Family	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	7	45	$321	95%	90%	$3.10	2,248	2,248
Utah	Single Family	Cool Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	86	45	$1,257	75%	35%	$1.11	7,459	7,459
Utah	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	567	15	$2,461	100%	N/A	$0.33	0.00	0.00
Utah	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	356	15	$1,230	100%	N/A	$0.26	0.00	0.00

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Utah	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	799	15	$4,101	100%	N/A	$0.39	0.00	0.00
Utah	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	2,270	15	$-2930.7632	44%	N/A	$0.00	35,036	40,709
Utah	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	2,066	15	$-2173.0723	22%	N/A	$0.00	73,279	85,143
Utah	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	26	20	$137	75%	90%	$0.40	3	3
Utah	Single Family	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	75	18	$1,197	25%	75%	$1.21	4,742	4,742
Utah	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	81	5	$300	95%	65%	$0.28	16,857	16,857
Utah	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	200	30	$675	40%	90%	$0.26	22,910	22,910
Utah	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	133	11	$895	25%	95%	$0.51	9,698	9,698
Utah	Single Family	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	62	5	$200	95%	65%	$0.25	12,903	12,903
Utah	Single Family	Cool Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	157	45	$2,373	75%	25%	$1.15	8,686	8,686
Utah	Single Family	Cool Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	202	45	$2,624	5.0%	50%	$0.99	1,463	1,463
Utah	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	294	20	$455	50%	95%	$0.12	47,209	47,209
Utah	Single Family	Cool Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	513	45	$9,396	65%	25%	$1.40	21,888	21,888
Utah	Single Family	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	31	45	$2,618	95%	60%	$6.44	0.00	0.00
Utah	Single Family	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	95	45	$17,009	95%	75%	$13.55	17,309	17,309
Utah	Single Family	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	94	45	$16,375	95%	95%	$13.26	0.00	0.00
Utah	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	109	18	$1,585	45%	95%	$1.10	1,641	1,641
Utah	Single Family	Cool Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	7	45	$321	95%	90%	$3.45	177	177
Utah	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	341	15	$1,764	100%	N/A	$0.39	0.00	0.00
Utah	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	215	15	$882	100%	N/A	$0.31	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	480	15	$2,941	100%	N/A	$0.47	96	99
Utah	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	1,287	15	$-2073	44%	N/A	$0.00	3,866	3,982
Utah	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	1,142	15	$-1529.75	44%	N/A	$0.00	15,908	16,384
Utah	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	26	20	$137	75%	90%	$0.40	0.27	0.27
Utah	Single Family	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	80	40	$402	75%	50%	$0.38	856	856
Utah	Single Family	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	54	40	$19,737	10%	100%	$27.48	71	71
Utah	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	45	5	$300	95%	65%	$0.51	1,125	1,125
Utah	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	111	30	$480	65%	90%	$0.33	1,661	1,661
Utah	Single Family	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$526	20%	65%	$34.06	3	3
Utah	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	74	11	$895	50%	95%	$0.92	1,201	1,201
Utah	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	164	20	$455	50%	95%	$0.21	2,216	2,216
Utah	Single Family	Cool Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	17	45	$2,618	95%	60%	$11.12	0.00	0.00
Utah	Single Family	Cool Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	64	45	$17,009	95%	75%	$20.17	965	965
Utah	Single Family	Cool Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	57	45	$16,375	95%	95%	$21.65	0.00	0.00
Utah	Single Family	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	2	45	$321	95%	90%	$9.55	36	36
Utah	Single Family	Cool Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	27	45	$1,257	75%	35%	$3.43	122	122
Utah	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	137	20	$1,166	50%	N/A	$0.65	413	496
Utah	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	65	30	$675	40%	90%	$0.79	389	389
Utah	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	52	9	$41	100%	N/A	$0.06	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	62	9	$308	100%	N/A	$0.38	0.00	64
Utah	Single Family	Cool Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	51	45	$2,373	75%	25%	$3.54	153	153
Utah	Single Family	Cool Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	65	45	$2,624	5.0%	50%	$3.05	25	25
Utah	Single Family	Cool Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	166	45	$9,396	65%	25%	$4.30	421	421
Utah	Single Family	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	10	45	$2,618	95%	60%	$19.85	0.00	0.00
Utah	Single Family	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	31	45	$17,009	95%	75%	$41.75	333	333
Utah	Single Family	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	30	45	$16,375	95%	95%	$40.86	0.00	0.00
Utah	Single Family	Cool Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	3	45	$321	95%	90%	$7.43	5	5
Utah	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	114	20	$960	95%	N/A	$0.64	116	117
Utah	Single Family	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	25	40	$19,737	10%	100%	$59.21	2	2
Utah	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	51	30	$480	65%	90%	$0.71	55	55
Utah	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	43	9	$41	100%	N/A	$0.07	0.00	0.00
Utah	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	51	9	$308	100%	N/A	$0.45	0.00	0.00
Utah	Single Family	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.54	45	$526	20%	65%	$73.39	0.13	0.13
Utah	Single Family	Cool Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	8	45	$2,618	95%	60%	$23.97	0.00	0.00
Utah	Single Family	Cool Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	29	45	$17,009	95%	75%	$43.46	36	36
Utah	Single Family	Cool Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	26	45	$16,375	95%	95%	$46.66	0.00	0.00
Utah	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	156	156
Utah	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	50	50
Utah	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.03	1,678	1,678
Utah	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.03	239	239
Utah	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.04	22	22
Utah	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.04	4	4

Table C-2.1. Residential Measure Details

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Utah	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	245	11	$372	100%	N/A	$0.12	4,812	20,304
Utah	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	230	11	$343	100%	N/A	$0.11	0.00	0.00
Utah	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	60	11	$75	100%	N/A	$0.09	0.00	0.00
Utah	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	245	11	$372	100%	N/A	$0.12	1,024	3,123
Utah	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	230	11	$343	100%	N/A	$0.11	0.00	0.00
Utah	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	60	11	$75	100%	N/A	$0.09	0.00	0.00
Utah	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	129	20	$3	100%	N/A	$0.00	0.00	495
Utah	Single Family	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	881	20	$121	17%	100%	$0.01	34,721	34,721
Utah	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	47	20	$6	100%	N/A	$0.01	0.00	0.00
Utah	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	129	20	$3	100%	N/A	$0.00	0.00	119
Utah	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,835	18	$1,585	13%	95%	$0.06	4,981	4,981
Utah	Single Family	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	32	45	$321	95%	90%	$0.76	618	618
Utah	Single Family	Heat Central	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	361	45	$1,257	75%	35%	$0.27	2,120	2,120
Utah	Single Family	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	245	20	$121	100%	80%	$0.04	4,396	4,396
Utah	Single Family	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	142	20	$56	100%	60%	$0.03	0.00	0.00
Utah	Single Family	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	327	18	$1,197	25%	75%	$0.28	1,399	1,399
Utah	Single Family	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	75	45	$347	25%	85%	$0.35	333	333
Utah	Single Family	Heat Central	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,749	45	$1,125	25%	49%	$0.05	4,503	4,503
Utah	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	9,101	20	$12,723	50%	N/A	$0.11	44,389	51,765
Utah	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	8,522	20	$10,580	0.0%	N/A	$0.09	0.00	0.00
Utah	Single Family	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	398	11	$463	75%	50%	$0.09	3,382	3,382
Utah	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	305	30	$675	40%	90%	$0.11	2,360	2,360

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Utah	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,040	11	$895	25%	95%	$0.06	5,256	5,256
Utah	Single Family	Heat Central	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,370	45	$2,373	75%	25%	$0.05	13,662	13,662
Utah	Single Family	Heat Central	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,375	45	$2,624	5.0%	50%	$0.05	2,262	2,262
Utah	Single Family	Heat Central	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,167	45	$9,396	65%	25%	$0.33	6,941	6,941
Utah	Single Family	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	359	45	$2,618	95%	60%	$0.56	0.00	0.00
Utah	Single Family	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	619	45	$17,009	95%	75%	$2.10	0.00	0.00
Utah	Single Family	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	894	45	$16,375	95%	95%	$1.40	15,702	15,702
Utah	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,084	18	$1,585	45%	95%	$0.10	1,271	1,271
Utah	Single Family	Heat Central	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	53	45	$321	95%	90%	$0.46	103	103
Utah	Single Family	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	357	45	$6,212	25%	95%	$1.33	0.00	0.00
Utah	Single Family	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	359	45	$6,320	25%	95%	$1.34	203	203
Utah	Single Family	Heat Central	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	415	20	$121	100%	80%	$0.02	684	684
Utah	Single Family	Heat Central	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	245	20	$56	100%	60%	$0.02	0.00	0.00
Utah	Single Family	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	432	40	$402	75%	50%	$0.06	360	360
Utah	Single Family	Heat Central	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	100	45	$347	75%	85%	$0.26	125	125
Utah	Single Family	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	451	40	$19,737	10%	100%	$3.02	43	43
Utah	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	5,376	20	$7,790	50%	N/A	$0.11	4,658	4,738
Utah	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	5,070	20	$6,253	0.0%	N/A	$0.09	0.00	0.00
Utah	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	180	30	$480	65%	90%	$0.13	204	204
Utah	Single Family	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	33	45	$526	20%	65%	$1.16	9	9
Utah	Single Family	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,388	20	$1,448	85%	95%	$0.05	3,752	3,752
Utah	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	614	11	$895	50%	95%	$0.10	621	621
Utah	Single Family	Heat Central	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	589	45	$1,515	50%	95%	$0.20	448	448
Utah	Single Family	Heat Central	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	500	45	$2,618	95%	60%	$0.40	0.00	0.00

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Utah	Single Family	Heat Central	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	879	45	$17,009	95%	75%	$1.48	0.00	0.00
Utah	Single Family	Heat Central	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	1,253	45	$16,375	95%	95%	$1.00	1,588	1,588
Utah	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	499	18	$1,585	13%	95%	$0.24	240	240
Utah	Single Family	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	17	45	$321	95%	90%	$1.40	60	60
Utah	Single Family	Heat Pump	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	194	45	$1,257	75%	35%	$0.49	203	203
Utah	Single Family	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	79	20	$121	100%	80%	$0.12	254	254
Utah	Single Family	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	46	20	$56	100%	60%	$0.09	0.00	0.00
Utah	Single Family	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	162	18	$1,197	25%	75%	$0.56	123	123
Utah	Single Family	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	17	45	$347	25%	85%	$1.51	14	14
Utah	Single Family	Heat Pump	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	440	45	$1,125	25%	49%	$0.19	213	213
Utah	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	578	20	$2,143	100%	N/A	$0.28	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	352	20	$1,607	100%	N/A	$0.35	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	922	20	$3,215	100%	N/A	$0.27	717	877
Utah	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	300	20	$1,071	100%	N/A	$0.27	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,377	20	$13,656	20%	N/A	$0.76	313	377
Utah	Single Family	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	138	11	$463	75%	50%	$0.26	202	202
Utah	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	170	5	$300	95%	65%	$0.13	426	426
Utah	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	37	30	$675	40%	90%	$1.38	51	51
Utah	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	487	11	$895	25%	95%	$0.14	440	440
Utah	Single Family	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	130	5	$200	20%	71%	$0.12	75	75
Utah	Single Family	Heat Pump	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,258	45	$2,373	75%	25%	$0.14	880	880

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Heat Pump	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,639	45	$2,624	5.0%	50%	$0.12	147	147
Utah	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	62	20	$455	50%	95%	$0.55	121	121
Utah	Single Family	Heat Pump	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,185	45	$9,396	65%	25%	$0.60	681	681
Utah	Single Family	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	148	45	$2,618	95%	60%	$1.35	0.00	0.00
Utah	Single Family	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	291	45	$17,009	95%	75%	$4.46	0.00	0.00
Utah	Single Family	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	384	45	$16,375	95%	95%	$3.25	1,205	1,205
Utah	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	272	18	$1,585	45%	95%	$0.44	63	63
Utah	Single Family	Heat Pump	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	23	45	$321	95%	90%	$1.05	9	9
Utah	Single Family	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	108	45	$6,212	25%	95%	$4.37	0.00	0.00
Utah	Single Family	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	126	45	$6,320	25%	95%	$3.82	13	13
Utah	Single Family	Heat Pump	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	112	20	$121	100%	80%	$0.08	38	38
Utah	Single Family	Heat Pump	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	66	20	$56	100%	60%	$0.06	0.00	0.00
Utah	Single Family	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	193	40	$402	75%	50%	$0.16	32	32
Utah	Single Family	Heat Pump	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	20	45	$347	75%	85%	$1.31	5	5
Utah	Single Family	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	197	40	$19,737	10%	100%	$7.63	4	4
Utah	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	306	20	$1,536	100%	N/A	$0.38	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	172	20	$1,152	100%	N/A	$0.51	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	509	20	$2,305	100%	N/A	$0.35	76	77
Utah	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	158	20	$768	100%	N/A	$0.37	0.00	0.00
Utah	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	759	20	$9,946	40%	N/A	$1.00	87	88
Utah	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	94	5	$300	95%	65%	$0.24	36	36
Utah	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	20	30	$480	65%	90%	$1.77	4	4

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	10	45	$526	20%	65%	$3.79	0.58	0.58
Utah	Single Family	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	685	20	$1,448	85%	95%	$0.16	219	219
Utah	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	268	11	$895	50%	95%	$0.25	61	61
Utah	Single Family	Heat Pump	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	179	45	$1,515	50%	95%	$0.64	30	30
Utah	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	34	20	$455	50%	95%	$0.99	7	7
Utah	Single Family	Heat Pump	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	162	45	$2,618	95%	60%	$1.23	0.00	0.00
Utah	Single Family	Heat Pump	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	325	45	$17,009	95%	75%	$3.98	0.00	0.00
Utah	Single Family	Heat Pump	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	422	45	$16,375	95%	95%	$2.96	122	122
Utah	Single Family	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	Existing	29	45	$321	95%	90%	$0.82	384	384
Utah	Single Family	Heat Room	Ceiling Insulation (UT) - Code	R-38 (UT Code)	R-15 (Existing Insulation)	Savings Per Building	Existing	334	45	$1,257	75%	35%	$0.29	1,319	1,319
Utah	Single Family	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	227	20	$121	100%	80%	$0.04	2,727	2,727
Utah	Single Family	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	Existing	132	20	$56	100%	60%	$0.03	0.00	0.00
Utah	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	4,104	20	$1,166	50%	N/A	$0.02	12,191	13,968
Utah	Single Family	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	Existing	69	45	$347	25%	85%	$0.38	220	220
Utah	Single Family	Heat Room	Floor Insulation (UT) - Code	R-30 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,619	45	$1,125	25%	49%	$0.05	2,961	2,961
Utah	Single Family	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	369	11	$463	75%	50%	$0.10	2,022	2,022
Utah	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	283	30	$675	40%	90%	$0.11	1,474	1,474
Utah	Single Family	Heat Room	Wall Insulation 2x4 (UT) - Below Code	R-13 (Below UT Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,120	45	$2,373	75%	25%	$0.06	8,398	8,398
Utah	Single Family	Heat Room	Wall Insulation 2x6 (UT) - Code	R-19 (UT Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,050	45	$2,624	5.0%	50%	$0.05	1,393	1,393
Utah	Single Family	Heat Room	Window (UT) - Code	U-value 0.35 Window (UT Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,006	45	$9,396	65%	25%	$0.36	4,413	4,413
Utah	Single Family	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	332	45	$2,618	95%	60%	$0.60	0.00	0.00
Utah	Single Family	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	573	45	$17,009	95%	75%	$2.27	0.00	0.00
Utah	Single Family	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	Existing	828	45	$16,375	95%	95%	$1.51	9,982	9,982
Utah	Single Family	Heat Room	Ceiling Insulation (UT) - Above Code	R-49 (Above UT Code)	R-38 (UT Code)	Savings Per Building	New	50	45	$321	95%	90%	$0.49	38	38
Utah	Single Family	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	338	45	$6,212	25%	95%	$1.40	0.00	0.00
Utah	Single Family	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	339	45	$6,320	25%	95%	$1.42	68	68
Utah	Single Family	Heat Room	Door (UT) - Above Code	R-10 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	393	20	$121	100%	80%	$0.02	259	259
Utah	Single Family	Heat Room	Door (UT) - Above Code	R-5 Door (Above UT Code)	R-2.9 Door (UT Code)	Savings Per Building	New	232	20	$56	100%	60%	$0.02	0.00	0.00

Table C-2.1. Residential Measure Details

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Utah	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	4,966	20	$1,000	95%	N/A	$0.02	5,404	5,475
Utah	Single Family	Heat Room	Floor Insulation (UT) - Above Code	R-38 (Above UT Code)	R-30 (UT Code)	Savings Per Building	New	95	45	$347	75%	85%	$0.28	51	51
Utah	Single Family	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	427	40	$19,737	10%	100%	$3.17	16	16
Utah	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	171	30	$480	65%	90%	$0.14	78	78
Utah	Single Family	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	31	45	$526	20%	65%	$1.23	3	3
Utah	Single Family	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,261	20	$1,448	85%	95%	$0.05	1,424	1,424
Utah	Single Family	Heat Room	Wall Insulation 2x6 (UT) - Above Code	R-21 + R-5 Sheathing (AboveUT Code)	R-19 (UT Code)	Savings Per Building	New	558	45	$1,515	50%	95%	$0.21	175	175
Utah	Single Family	Heat Room	Window (UT) - Tier 1 Above Code	U-value 0.30 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	474	45	$2,618	95%	60%	$0.42	0.00	0.00
Utah	Single Family	Heat Room	Window (UT) - Tier 2 Above Code	U-value 0.25 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	832	45	$17,009	95%	75%	$1.56	0.00	0.00
Utah	Single Family	Heat Room	Window (UT) - Tier 3 Above Code	U-value 0.22 Window (Above UT Code)	U-value 0.35 Window (UT Code)	Savings Per Building	New	1,187	45	$16,375	95%	95%	$1.05	633	633
Utah	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.37	3,530	3,530
Utah	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.37	175	175
Utah	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	26	7	$1	45%	N/A	$0.01	5,033	5,033
Utah	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	28	12	$37	55%	N/A	$0.10	62,468	62,468
Utah	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	26	7	$1	45%	N/A	$0.01	913	913
Utah	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	28	12	$37	55%	N/A	$0.10	9,707	9,707
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	100%	N/A	$0.00	0.00	0.00
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	5	$1	85%	N/A	$0.01	0.00	63,677
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	30	12	$21	15%	N/A	$0.05	2,401	83,528
Utah	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	5	10	$60	2.5%	95%	$0.91	1,007	1,007
Utah	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	10%	95%	$1.54	2,678	2,678
Utah	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$1.54	534	534
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.01	0.00	0.00

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Utah	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	100%	N/A	$0.00	0.00	0.00
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	5	$1	85%	N/A	$0.01	0.00	12,959
Utah	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	30	12	$21	15%	N/A	$0.05	2,399	7,141
Utah	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	5	10	$60	2.5%	95%	$0.91	162	164
Utah	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	10%	95%	$1.54	431	438
Utah	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$1.54	86	87
Utah	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.02	9,074	9,074
Utah	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.02	1,931	1,931
Utah	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	578	578
Utah	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	354	354
Utah	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.03	298	298
Utah	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.02	8,350	8,350
Utah	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.03	47	47
Utah	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.02	1,330	1,330
Utah	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	Existing	440	10	$175	40%	N/A	$0.03	526	526
Utah	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	Existing	1,170	10	$750	75%	N/A	$0.05	4,741	4,741
Utah	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	New	440	10	$175	40%	N/A	$0.03	95	95
Utah	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	New	1,170	10	$750	75%	N/A	$0.05	859	859
Utah	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	4,002	4,002
Utah	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.70	0.70
Utah	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	196	20	$633	100%	N/A	$0.25	28,149	32,188

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	153	20	$37	100%	N/A	$0.02	0.00	0.00
Utah	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Single Family	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,214	20	$121	6.5%	100%	$0.01	32,820	32,820
Utah	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	174	20	$472	100%	N/A	$0.21	0.00	0.00
Utah	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	196	20	$633	100%	N/A	$0.25	9,011	9,100
Utah	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	153	20	$37	100%	N/A	$0.02	0.00	0.00
Utah	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	48	20	$16	100%	N/A	$0.03	0.00	0.00
Utah	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.00	10,790	10,790
Utah	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.00	1,668	1,668
Utah	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.24	7,274	7,274
Utah	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.24	704	704
Utah	Single Family	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	319	20	$120	100%	N/A	$0.03	43,629	45,438
Utah	Single Family	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	78	20	$60	100%	N/A	$0.06	0.00	0.00
Utah	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,878	13	$604	100%	N/A	$0.02	5,502	5,951
Utah	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	41	13	$361	100%	N/A	$0.66	0.00	0.00
Utah	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,878	13	$604	100%	N/A	$0.02	1,032	962
Utah	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	41	13	$361	100%	N/A	$0.66	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	266	14	$140	97%	24%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	95	14	$58	97%	24%	$0.05	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	465	14	$210	97%	24%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	346	14	$198	97%	95%	$0.04	0.00	116

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	175	14	$116	97%	95%	$0.05	301	352
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	544	14	$268	97%	95%	$0.04	0.00	303
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	171	14	$81	97%	75%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	369	14	$152	97%	75%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	198	14	$70	97%	87%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	171	14	$81	97%	87%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	64	12	$161	68%	13%	$0.19	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	12	12	$7	68%	13%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	113	12	$309	68%	85%	$0.21	0.03	13
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	61	12	$155	68%	85%	$0.19	83	104
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$154	68%	35%	$0.23	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	420	40	$935	29%	90%	$0.17	277	277
Utah	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	82	10	$5	100%	25%	$0.01	51	51
Utah	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	71	10	$7	75%	65%	$0.01	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	174	10	$8	75%	95%	$0.00	309	309
Utah	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	276	10	$59	100%	65%	$0.02	446	446
Utah	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	276	10	$44	100%	10%	$0.01	68	68

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	2	2
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	38	38
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	6	6
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	35	35
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	266	14	$140	97%	24%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	95	14	$58	97%	24%	$0.05	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	465	14	$210	97%	24%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	346	14	$198	97%	95%	$0.04	0.00	12
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	175	14	$116	97%	95%	$0.05	32	32
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	544	14	$268	97%	95%	$0.04	0.00	32
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	171	14	$81	97%	75%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	369	14	$152	97%	75%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	198	14	$70	97%	87%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	171	14	$81	97%	87%	$0.04	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	64	12	$161	68%	13%	$0.19	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	12	12	$7	68%	13%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	113	12	$309	68%	85%	$0.21	0.00	1
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	61	12	$155	68%	85%	$0.19	10	10
Utah	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$154	68%	35%	$0.23	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	438	40	$935	59%	90%	$0.16	24	24
Utah	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	71	10	$7	75%	65%	$0.01	0.00	0.00
Utah	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	174	10	$8	75%	95%	$0.00	37	37
Utah	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	276	10	$59	100%	65%	$0.02	54	54
Utah	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	276	10	$44	100%	10%	$0.01	8	8
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	0.27	0.27
Utah	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	0.73	0.73
Utah	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,679	13	$1,136	59%	N/A	$0.05	30,722	34,386
Utah	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	100	13	$72	100%	N/A	$0.05	0.00	245
Utah	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,679	13	$1,136	59%	N/A	$0.05	5,925	5,523
Utah	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	100	13	$72	100%	N/A	$0.05	0.00	32
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	266	14	$140	97%	24%	$0.04	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	95	14	$58	97%	24%	$0.05	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	465	14	$210	97%	24%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	346	14	$198	97%	95%	$0.04	0.00	1,450
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	175	14	$116	97%	95%	$0.05	4,536	4,890
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	544	14	$268	97%	95%	$0.04	0.00	3,609
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	171	14	$81	97%	75%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	369	14	$152	97%	75%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	198	14	$70	97%	87%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	171	14	$81	97%	87%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	64	12	$161	68%	13%	$0.19	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	12	12	$7	68%	13%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	113	12	$309	68%	85%	$0.21	0.22	161
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	61	12	$155	68%	85%	$0.19	1,261	1,405
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$154	68%	35%	$0.23	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	411	40	$935	29%	90%	$0.17	4,080	4,080
Utah	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	82	10	$5	100%	25%	$0.01	770	770

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	71	10	$7	75%	65%	$0.01	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	174	10	$8	75%	95%	$0.00	4,664	4,664
Utah	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	276	10	$59	100%	65%	$0.02	6,725	6,725
Utah	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	276	10	$44	100%	10%	$0.01	1,034	1,034
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.44	34	34
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.02	569	569
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.19	89	89
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.02	519	519
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	266	14	$140	97%	24%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	95	14	$58	97%	24%	$0.05	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	465	14	$210	97%	24%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	346	14	$198	97%	95%	$0.04	0.00	218
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	175	14	$116	97%	95%	$0.05	578	578
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	544	14	$268	97%	95%	$0.04	0.00	575
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	171	14	$81	97%	75%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	369	14	$152	97%	75%	$0.03	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	198	14	$70	97%	87%	$0.03	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	171	14	$81	97%	87%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	64	12	$161	68%	13%	$0.19	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	12	12	$7	68%	13%	$0.04	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	113	12	$309	68%	85%	$0.21	0.00	26
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	61	12	$155	68%	85%	$0.19	179	179
Utah	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$154	68%	35%	$0.23	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	410	40	$935	59%	90%	$0.17	415	415
Utah	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	71	10	$7	75%	65%	$0.01	0.00	0.00
Utah	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	174	10	$8	75%	95%	$0.00	675	675
Utah	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	276	10	$59	100%	65%	$0.02	974	974
Utah	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	276	10	$44	100%	10%	$0.01	149	149
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.44	4	4
Utah	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.19	12	12
Washington	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	110	110
Washington	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	2	2
Washington	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.49	10	10
Washington	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.49	0.60	0.60
Washington	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	135	18	$1,585	2.5%	95%	$0.09	31	31

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Cool Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	14	45	$418	40%	95%	$0.49	53	53
Washington	Manufactured	Cool Central	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	202	45	$1,849	75%	35%	$0.12	511	511
Washington	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	280	15	$1,764	100%	N/A	$0.73	0.00	0.00
Washington	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	183	15	$882	100%	N/A	$0.56	0.00	0.00
Washington	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	387	15	$2,941	100%	N/A	$0.88	1,623	1,978
Washington	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,178	15	$-2073	7.4%	N/A	$-0.20	97	118
Washington	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,122	15	$-1529.75	3.7%	N/A	$-0.16	230	281
Washington	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	12	20	$160	25%	95%	$1.27	0.01	0.01
Washington	Manufactured	Cool Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	7	18	$597	25%	75%	$0.91	14	14
Washington	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	55	5	$300	95%	65%	$1.27	335	335
Washington	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	138	30	$675	10%	90%	$0.16	112	112
Washington	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	92	11	$895	10%	95%	$0.12	78	78
Washington	Manufactured	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	42	5	$200	95%	65%	$1.10	256	256
Washington	Manufactured	Cool Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	190	45	$1,816	75%	25%	$0.02	310	310
Washington	Manufactured	Cool Central	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	232	45	$2,137	5.0%	50%	$0.02	49	49
Washington	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	203	20	$455	50%	95%	$0.23	938	938
Washington	Manufactured	Cool Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	325	45	$6,796	65%	25%	$0.44	408	408
Washington	Manufactured	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	17	45	$243	65%	25%	$0.30	0.00	0.00
Washington	Manufactured	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	56	45	$8,675	95%	75%	$3.78	299	299

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Washington	Manufactured	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	54	45	$8,304	95%	95%	$2.47	0.00	0.00
Washington	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	70	18	$1,585	20%	95%	$0.26	4	4
Washington	Manufactured	Cool Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	6	45	$418	60%	95%	$0.31	1	1
Washington	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	161	15	$1,346	100%	N/A	$0.97	0.00	0.00
Washington	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	106	15	$673	100%	N/A	$0.74	0.00	0.00
Washington	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	222	15	$2,244	100%	N/A	$1.17	69	69
Washington	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	639	15	$-1558.3421	7.4%	N/A	$-0.28	5	5
Washington	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	596	15	$-1143.7565	7.4%	N/A	$-0.22	18	18
Washington	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	12	20	$160	25%	95%	$1.27	0.00	0.00
Washington	Manufactured	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	35	40	$195	75%	25%	$0.04	1	1
Washington	Manufactured	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	35	40	$22,992	5.0%	100%	$7.97	0.20	0.20
Washington	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	29	5	$300	95%	65%	$2.43	6	6
Washington	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	72	30	$480	25%	90%	$0.27	3	3
Washington	Manufactured	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	2	45	$617	20%	65%	$2.46	0.06	0.06
Washington	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	48	11	$895	20%	95%	$0.34	2	2
Washington	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	106	20	$455	50%	95%	$0.43	12	12
Washington	Manufactured	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	3	45	$243	95%	60%	$0.20	0.00	0.00
Washington	Manufactured	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	29	45	$8,675	95%	75%	$2.44	4	4
Washington	Manufactured	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	18	45	$8,304	95%	95%	$1.54	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Cool Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	4	45	$418	40%	95%	$0.59	4	4
Washington	Manufactured	Cool Room	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	63	45	$1,849	75%	35%	$0.16	38	38
Washington	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	140	20	$1,166	50%	N/A	$0.69	80	94
Washington	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	43	30	$675	10%	90%	$0.25	8	8
Washington	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	35	9	$41	100%	N/A	$0.18	0.00	0.00
Washington	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	41	9	$308	100%	N/A	$1.15	0.00	6
Washington	Manufactured	Cool Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	60	45	$1,816	75%	25%	$0.04	24	24
Washington	Manufactured	Cool Room	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	73	45	$2,137	5.0%	50%	$0.04	3	3
Washington	Manufactured	Cool Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	102	45	$6,796	65%	25%	$0.56	35	35
Washington	Manufactured	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	5	45	$243	65%	25%	$0.38	0.00	0.00
Washington	Manufactured	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	17	45	$8,675	95%	75%	$4.72	25	25
Washington	Manufactured	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	17	45	$8,304	95%	95%	$2.86	0.00	0.00
Washington	Manufactured	Cool Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	2	45	$418	60%	95%	$0.33	0.12	0.12
Washington	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	59	20	$960	95%	N/A	$1.63	1	1
Washington	Manufactured	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	15	40	$22,992	5.0%	100%	$8.66	0.02	0.02
Washington	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	31	30	$480	25%	90%	$0.37	0.47	0.47
Washington	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	26	9	$41	100%	N/A	$0.24	0.00	0.00
Washington	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	31	9	$308	100%	N/A	$1.53	0.00	0.00
Washington	Manufactured	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.90	45	$617	20%	65%	$2.61	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	1	45	$243	95%	60%	$0.22	0.00	0.00
Washington	Manufactured	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	13	45	$8,675	95%	75%	$2.59	0.61	0.61
Washington	Manufactured	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	7	45	$8,304	95%	95%	$1.59	0.00	0.00
Washington	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	26	26
Washington	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	0.92	0.92
Washington	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	0.00	0.00
Washington	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.00	0.00
Washington	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	200	11	$372	100%	N/A	$0.26	121	512
Washington	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	188	11	$343	100%	N/A	$0.25	0.00	0.00
Washington	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	49	11	$75	100%	N/A	$0.21	0.00	0.00
Washington	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	200	11	$372	100%	N/A	$0.26	6	19
Washington	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	188	11	$343	100%	N/A	$0.25	0.00	0.00
Washington	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	49	11	$75	100%	N/A	$0.21	0.00	0.00
Washington	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	72	20	$2	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	145	20	$22	100%	N/A	$0.02	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	170	20	$39	100%	N/A	$0.02	161	218
Washington	Manufactured	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	542	20	$129	17%	100%	$0.02	693	693
Washington	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	New	72	20	$2	100%	N/A	$0.00	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	145	20	$22	100%	N/A	$0.02	0.00	0.00
Washington	Manufactured	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	170	20	$39	100%	N/A	$0.02	15	16
Washington	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,609	18	$1,585	2.5%	95%	$0.10	209	209
Washington	Manufactured	Heat Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	75	45	$418	40%	95%	$0.44	156	156
Washington	Manufactured	Heat Central	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	1,124	45	$1,849	75%	35%	$0.13	1,609	1,609
Washington	Manufactured	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	85	20	$65	100%	80%	$0.08	361	361
Washington	Manufactured	Heat Central	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	162	20	$56	50%	60%	$0.04	257	257
Washington	Manufactured	Heat Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	81	18	$597	25%	75%	$0.74	83	83
Washington	Manufactured	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	112	45	$406	25%	85%	$0.31	122	122
Washington	Manufactured	Heat Central	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,832	45	$1,318	25%	5%	$0.04	181	181
Washington	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,911	20	$9,122	50%	N/A	$0.12	11,257	12,306
Washington	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,307	20	$7,586	0.0%	N/A	$0.11	0.00	0.00
Washington	Manufactured	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	173	11	$271	75%	50%	$0.22	342	342
Washington	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	268	30	$675	10%	90%	$0.18	126	126
Washington	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	912	11	$895	10%	95%	$0.13	452	452
Washington	Manufactured	Heat Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,270	45	$1,816	75%	25%	$0.05	3,251	3,251
Washington	Manufactured	Heat Central	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	4,035	45	$2,137	5.0%	50%	$0.05	509	509
Washington	Manufactured	Heat Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,258	45	$6,796	65%	25%	$0.41	1,004	1,004
Washington	Manufactured	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	64	45	$243	65%	25%	$0.28	0.00	0.00
Washington	Manufactured	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	194	45	$8,675	95%	75%	$3.33	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	321	45	$8,304	95%	95%	$2.05	1,404	1,404
Washington	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	725	18	$1,585	20%	95%	$0.22	22	22
Washington	Manufactured	Heat Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	141	45	$418	60%	95%	$0.25	11	11
Washington	Manufactured	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	180	20	$65	50%	80%	$0.04	8	8
Washington	Manufactured	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	357	40	$195	75%	25%	$0.05	8	8
Washington	Manufactured	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	187	45	$406	75%	85%	$0.19	14	14
Washington	Manufactured	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	302	40	$22,992	5.0%	100%	$6.31	0.83	0.83
Washington	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,565	20	$5,945	50%	N/A	$0.17	218	225
Washington	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,293	20	$4,772	0.0%	N/A	$0.15	0.00	0.00
Washington	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	120	30	$480	25%	90%	$0.28	3	3
Washington	Manufactured	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	26	45	$617	20%	65%	$1.90	0.45	0.45
Washington	Manufactured	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,338	20	$701	0.0%	95%	$0.05	0.00	0.00
Washington	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	410	11	$895	20%	95%	$0.28	13	13
Washington	Manufactured	Heat Central	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	335	45	$1,031	50%	95%	$0.27	20	20
Washington	Manufactured	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	123	45	$243	95%	60%	$0.17	0.00	0.00
Washington	Manufactured	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	381	45	$8,675	95%	75%	$1.89	0.00	0.00
Washington	Manufactured	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	610	45	$8,304	95%	95%	$1.16	62	62
Washington	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	584	18	$1,585	2.5%	95%	$0.29	58	58
Washington	Manufactured	Heat Pump	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	38	45	$418	40%	95%	$0.96	61	61
Washington	Manufactured	Heat Pump	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	563	45	$1,849	75%	35%	$0.29	623	623

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	32	20	$65	100%	80%	$0.21	105	105
Washington	Manufactured	Heat Pump	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	61	20	$56	50%	60%	$0.09	75	75
Washington	Manufactured	Heat Pump	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	27	18	$597	25%	75%	$2.27	22	22
Washington	Manufactured	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	31	45	$406	25%	85%	$1.11	27	27
Washington	Manufactured	Heat Pump	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	866	45	$1,318	25%	5%	$0.13	44	44
Washington	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	604	20	$1,536	100%	N/A	$0.26	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	402	20	$1,152	100%	N/A	$0.29	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	910	20	$2,305	100%	N/A	$0.26	678	900
Washington	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	307	20	$768	100%	N/A	$0.25	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source RTF Tier 1	RTF Tier 1 Air Source Heat Pump - SEER/EER 13/11 and HSPF 8.2 (Split System) (Manufactured Homes Only)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	307	20	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source RTF Tier 2	RTF Tier 2 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.5 (Split System) (Manufactured Homes Only)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	604	20	$768	100%	N/A	$0.13	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	2,184	20	$9,791	2.5%	N/A	$0.45	55	71
Washington	Manufactured	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	40	11	$271	75%	50%	$0.93	61	61
Washington	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	118	5	$300	95%	65%	$0.60	310	310
Washington	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	23	30	$675	10%	90%	$2.68	8	8
Washington	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	437	11	$895	10%	95%	$0.28	167	167

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	90	5	$200	20%	75%	$0.52	57	57
Washington	Manufactured	Heat Pump	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,382	45	$1,816	75%	25%	$0.11	1,033	1,033
Washington	Manufactured	Heat Pump	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,712	45	$2,137	5.0%	50%	$0.11	163	163
Washington	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	965	20	$455	50%	95%	$0.05	1,942	1,942
Washington	Manufactured	Heat Pump	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	684	45	$6,796	65%	25%	$0.86	388	388
Washington	Manufactured	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	30	45	$243	65%	25%	$0.70	0.00	0.00
Washington	Manufactured	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	101	45	$8,675	95%	75%	$7.43	0.00	0.00
Washington	Manufactured	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	150	45	$8,304	95%	95%	$4.80	466	466
Washington	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	232	18	$1,585	20%	95%	$0.73	5	5
Washington	Manufactured	Heat Pump	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	53	45	$418	60%	95%	$0.68	3	3
Washington	Manufactured	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	51	20	$65	50%	80%	$0.13	2	2
Washington	Manufactured	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	170	40	$195	75%	25%	$0.10	3	3
Washington	Manufactured	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	44	45	$406	75%	85%	$0.79	3	3
Washington	Manufactured	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	136	40	$22,992	5.0%	100%	$14.84	0.36	0.36
Washington	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	271	20	$1,172	100%	N/A	$0.44	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	180	20	$879	100%	N/A	$0.49	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	409	20	$1,759	100%	N/A	$0.44	33	33
Washington	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	139	20	$586	100%	N/A	$0.43	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Air Source RTF Tier 1	RTF Tier 1 Air Source Heat Pump - SEER/EER 13/11 and HSPF 8.2 (Split System) (Manufactured Homes Only)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	139	20	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Heat Pump	Heat Pump - Air Source RTF Tier 2	RTF Tier 2 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.5 (Split System) (Manufactured Homes Only)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	271	20	$586	100%	N/A	$0.22	0.00	0.00
Washington	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	862	20	$7,590	5.0%	N/A	$0.89	4	4
Washington	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	54	5	$300	95%	65%	$1.30	5	5
Washington	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	11	30	$480	25%	90%	$4.01	0.26	0.26
Washington	Manufactured	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	11	45	$617	20%	65%	$4.82	0.16	0.16
Washington	Manufactured	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	370	20	$701	0.0%	95%	$0.19	0.00	0.00
Washington	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	186	11	$895	20%	95%	$0.67	5	5
Washington	Manufactured	Heat Pump	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	108	45	$1,031	50%	95%	$0.83	5	5
Washington	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	410	20	$455	50%	95%	$0.11	21	21
Washington	Manufactured	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	44	45	$243	95%	60%	$0.48	0.00	0.00
Washington	Manufactured	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	155	45	$8,675	95%	75%	$4.84	0.00	0.00
Washington	Manufactured	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	219	45	$8,304	95%	95%	$3.29	18	18
Washington	Manufactured	Heat Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	68	45	$418	40%	95%	$0.47	10	10
Washington	Manufactured	Heat Room	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	1,027	45	$1,849	75%	35%	$0.14	105	105
Washington	Manufactured	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	77	20	$65	100%	80%	$0.09	23	23
Washington	Manufactured	Heat Room	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	148	20	$56	50%	60%	$0.04	16	16
Washington	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,717	20	$1,166	50%	N/A	$0.04	215	238
Washington	Manufactured	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	102	45	$406	25%	85%	$0.34	8	8
Washington	Manufactured	Heat Room	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,588	45	$1,318	25%	5%	$0.04	12	12

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	158	11	$271	75%	50%	$0.24	22	22
Washington	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	245	30	$675	10%	90%	$0.20	8	8
Washington	Manufactured	Heat Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,988	45	$1,816	75%	25%	$0.05	210	210
Washington	Manufactured	Heat Room	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,687	45	$2,137	5.0%	50%	$0.05	33	33
Washington	Manufactured	Heat Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,149	45	$6,796	65%	25%	$0.44	66	66
Washington	Manufactured	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	58	45	$243	65%	25%	$0.31	0.00	0.00
Washington	Manufactured	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	177	45	$8,675	95%	75%	$3.60	0.00	0.00
Washington	Manufactured	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	294	45	$8,304	95%	95%	$2.22	93	93
Washington	Manufactured	Heat Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	133	45	$418	60%	95%	$0.26	0.51	0.51
Washington	Manufactured	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	169	20	$65	50%	80%	$0.04	0.41	0.41
Washington	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,717	20	$1,000	95%	N/A	$0.04	24	24
Washington	Manufactured	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	176	45	$406	75%	85%	$0.20	0.73	0.73
Washington	Manufactured	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	284	40	$22,992	5.0%	100%	$6.68	0.04	0.04
Washington	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	113	30	$480	25%	90%	$0.29	0.15	0.15
Washington	Manufactured	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	25	45	$617	20%	65%	$2.02	0.02	0.02
Washington	Manufactured	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,258	20	$701	0.0%	95%	$0.06	0.00	0.00
Washington	Manufactured	Heat Room	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	315	45	$1,031	50%	95%	$0.28	0.96	0.96
Washington	Manufactured	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	115	45	$243	95%	60%	$0.18	0.00	0.00
Washington	Manufactured	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	358	45	$8,675	95%	75%	$2.01	0.00	0.00
Washington	Manufactured	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	573	45	$8,304	95%	95%	$1.23	2	2
Washington	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	90	90
Washington	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	1	1
Washington	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$-0.04	44	44
Washington	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	744	744

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Washington	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$-0.04	1	1
Washington	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	28	28
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	85%	N/A	$-0.01	0.00	1,782
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	47	1,008
Washington	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$2.07	12	12
Washington	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.50	33	33
Washington	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.50	6	6
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	85%	N/A	$-0.01	0.00	39
Washington	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	7	22
Washington	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$2.07	0.51	0.51
Washington	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.50	1	1
Washington	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.50	0.27	0.27
Washington	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	226	226
Washington	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	12	12
Washington	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	9	9
Washington	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	1	1
Washington	Manufactured	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	7	7
Washington	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	211	211
Washington	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.30	0.30
Washington	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	8	8
Washington	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	79	79
Washington	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$94	100%	N/A	$0.07	337	438
Washington	Manufactured	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	724	20	$129	13%	100%	$0.02	1,325	1,325
Washington	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Manufactured	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$94	100%	N/A	$0.07	32	32
Washington	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	315	315
Washington	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	12	12
Washington	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	156	156
Washington	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	3	3
Washington	Manufactured	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	267	20	$120	100%	N/A	$0.05	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	33	13	$361	100%	N/A	$2.08	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,513	13	$516	100%	N/A	$0.06	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,529	13	$1,042	100%	N/A	$0.10	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,557	13	$867	100%	N/A	$0.09	986	1,120

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	33	13	$361	100%	N/A	$2.08	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,513	13	$516	100%	N/A	$0.06	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,529	13	$1,042	100%	N/A	$0.10	0.00	0.00
Washington	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,557	13	$867	100%	N/A	$0.09	47	46
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	90	14	$105	90%	83%	$-0.27	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	12	14	$28	90%	83%	$-2.76	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	68	14	$35	90%	83%	$-0.49	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$102	90%	90%	$-0.25	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	127	14	$209	90%	95%	$-0.10	0.00	15
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	36	14	$103	90%	95%	$-0.67	0.00	2
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	24	14	$75	90%	95%	$-1.14	9	10
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	30	12	$106	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$36	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	52	12	$184	33%	85%	$0.46	0.00	0.72

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	32	12	$114	33%	85%	$0.45	4	6
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	20	12	$70	33%	65%	$0.45	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	335	40	$935	29%	90%	$0.25	50	50
Washington	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	73	10	$4	100%	25%	$-0.03	10	10
Washington	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	64	10	$5	66%	65%	$-0.02	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	157	10	$6	66%	95%	$-0.03	56	56
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	181	10	$46	100%	65%	$0.02	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	290	10	$50	100%	85%	$0.01	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	402	10	$53	100%	90%	$-0.00	206	206
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	0.73	0.73
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	12	12
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	1	1
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	11	11
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	90	14	$105	90%	83%	$-0.27	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	12	14	$28	90%	83%	$-2.76	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	68	14	$35	90%	83%	$-0.49	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$102	90%	90%	$-0.25	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	127	14	$209	90%	95%	$-0.10	0.00	0.40
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	36	14	$103	90%	95%	$-0.67	0.00	0.07
Washington	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	24	14	$75	90%	95%	$-1.14	0.22	0.22
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	30	12	$106	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$36	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	52	12	$184	33%	85%	$0.46	0.00	0.01
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	32	12	$114	33%	85%	$0.45	0.14	0.14
Washington	Manufactured	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	20	12	$70	33%	65%	$0.45	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	355	40	$935	59%	90%	$0.23	1	1
Washington	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	64	10	$5	66%	65%	$-0.02	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	157	10	$6	66%	95%	$-0.03	1	1
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	181	10	$46	100%	65%	$0.02	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	290	10	$50	100%	85%	$0.01	0.00	0.00
Washington	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	402	10	$53	100%	90%	$-0.00	6	6

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.02	0.02
Washington	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.05	0.05
Washington	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	902	13	$1,728	59%	N/A	$0.27	2,474	2,869
Washington	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,406	13	$1,655	59%	N/A	$0.17	5,708	6,590
Washington	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	81	13	$72	100%	N/A	$0.11	0.00	0.00
Washington	Manufactured	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	34	13	$30	100%	N/A	$0.11	0.00	0.00
Washington	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	902	13	$1,728	59%	N/A	$0.27	118	118
Washington	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,406	13	$1,655	59%	N/A	$0.17	273	272
Washington	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	81	13	$72	100%	N/A	$0.11	0.00	0.00
Washington	Manufactured	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	34	13	$30	100%	N/A	$0.11	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	90	14	$105	90%	83%	$-0.27	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	12	14	$28	90%	83%	$-2.76	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	68	14	$35	90%	83%	$-0.49	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$102	90%	90%	$-0.25	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	127	14	$209	90%	95%	$-0.10	0.00	175

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	36	14	$103	90%	95%	$-0.67	0.00	31
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	24	14	$75	90%	95%	$-1.14	115	130
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	30	12	$106	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$36	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	52	12	$184	33%	85%	$0.46	0.01	8
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	32	12	$114	33%	85%	$0.45	63	75
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	20	12	$70	33%	65%	$0.45	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	333	40	$935	29%	90%	$0.25	641	641
Washington	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	73	10	$4	100%	25%	$-0.03	134	134
Washington	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	64	10	$5	66%	65%	$-0.02	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	157	10	$6	66%	95%	$-0.03	715	715
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	181	10	$46	100%	65%	$0.02	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	290	10	$50	100%	85%	$0.01	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	402	10	$53	100%	90%	$-0.00	2,633	2,633
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	9	9
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	153	153

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	24	24
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	139	139
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	90	14	$105	90%	83%	$-0.27	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	12	14	$28	90%	83%	$-2.76	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	68	14	$35	90%	83%	$-0.49	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$102	90%	90%	$-0.25	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	127	14	$209	90%	95%	$-0.10	0.00	5
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	36	14	$103	90%	95%	$-0.67	0.00	1
Washington	Manufactured	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	24	14	$75	90%	95%	$-1.14	3	3
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	30	12	$106	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$36	33%	70%	$0.46	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	52	12	$184	33%	85%	$0.46	0.00	0.24
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	32	12	$114	33%	85%	$0.45	2	2

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Manufactured	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	20	12	$70	33%	65%	$0.45	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	333	40	$935	59%	90%	$0.25	14	14
Washington	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	64	10	$5	66%	65%	$-0.02	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	157	10	$6	66%	95%	$-0.03	23	23
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	181	10	$46	100%	65%	$0.02	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	290	10	$50	100%	85%	$0.01	0.00	0.00
Washington	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	402	10	$53	100%	90%	$-0.00	87	87
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.29	0.29
Washington	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.78	0.78
Washington	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	139	139
Washington	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	2	2
Washington	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.49	16	16
Washington	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.49	1	1
Washington	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	120	18	$1,585	2.5%	95%	$0.37	32	32
Washington	Multifamily	Cool Central	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	8	45	$153	75%	95%	$0.93	64	64
Washington	Multifamily	Cool Central	Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	71	45	$600	75%	35%	$0.39	209	209
Washington	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	234	15	$1,718	100%	N/A	$0.85	0.00	0.00
Washington	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	153	15	$859	100%	N/A	$0.65	0.00	0.00

Table C-2.1. Residential Measure Details

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Washington	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	323	15	$2,863	100%	N/A	$1.03	2,324	2,625
Washington	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	958	15	$-2015.8158	3.0%	N/A	$-0.24	224	253
Washington	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	903	15	$-1486.8618	1.5%	N/A	$-0.19	105	119
Washington	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	5	20	$68	25%	95%	$1.27	0.01	0.01
Washington	Multifamily	Cool Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	4	18	$298	25%	75%	$3.05	9	9
Washington	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	49	5	$300	95%	65%	$1.43	344	344
Washington	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	123	30	$675	5.0%	90%	$0.35	59	59
Washington	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	81	11	$895	5.0%	95%	$0.47	41	41
Washington	Multifamily	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	38	5	$200	95%	65%	$1.24	263	263
Washington	Multifamily	Cool Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	147	45	$1,640	75%	25%	$0.05	286	286
Washington	Multifamily	Cool Central	Wall Insulation 2x6 (WA) - Code	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	171	45	$1,772	5.0%	50%	$0.04	43	43
Washington	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	180	20	$455	10%	95%	$0.26	192	192
Washington	Multifamily	Cool Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	294	45	$5,542	65%	25%	$0.86	475	475
Washington	Multifamily	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	7	45	$198	95%	60%	$0.79	0.00	0.00
Washington	Multifamily	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	42	45	$7,074	95%	75%	$7.77	288	288
Washington	Multifamily	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	39	45	$6,771	95%	95%	$5.90	0.00	0.00
Washington	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	70	18	$1,585	20%	95%	$0.74	4	4
Washington	Multifamily	Cool Central	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	New	5	45	$153	90%	95%	$0.84	1	1
Washington	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	150	15	$1,207	100%	N/A	$0.93	0.00	0.00
Washington	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	98	15	$603	100%	N/A	$0.71	0.00	0.00

Table C-2.1. Residential Measure Details

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Washington	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	206	15	$2,012	100%	N/A	$1.13	107	108
Washington	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	599	15	$-1386.7895	3.0%	N/A	$-0.27	10	10
Washington	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	561	15	$-1015.0921	3.0%	N/A	$-0.21	9	9
Washington	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	5	20	$68	25%	95%	$1.27	0.00	0.00
Washington	Multifamily	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	31	40	$158	75%	25%	$0.17	1	1
Washington	Multifamily	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	35	40	$9,764	10%	100%	$9.12	0.47	0.47
Washington	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	28	5	$300	95%	65%	$2.46	7	7
Washington	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	71	30	$480	15%	90%	$0.45	2	2
Washington	Multifamily	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$251	20%	65%	$3.56	0.04	0.04
Washington	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	47	11	$895	10%	95%	$0.92	1	1
Washington	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	105	20	$455	10%	95%	$0.44	2	2
Washington	Multifamily	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	3	45	$198	95%	60%	$0.66	0.00	0.00
Washington	Multifamily	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	27	45	$7,074	95%	75%	$6.87	5	5
Washington	Multifamily	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	18	45	$6,771	95%	95%	$4.97	0.00	0.00
Washington	Multifamily	Cool Room	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	2	45	$153	75%	95%	$1.64	20	20
Washington	Multifamily	Cool Room	Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	21	45	$600	75%	35%	$0.74	67	67
Washington	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	31	20	$1,166	50%	N/A	$3.12	0.00	0.00
Washington	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	37	30	$675	5.0%	90%	$0.78	19	19
Washington	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	30	9	$41	100%	N/A	$0.21	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	35	9	$308	100%	N/A	$1.34	0.00	25
Washington	Multifamily	Cool Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	45	45	$1,640	75%	25%	$0.13	97	97
Washington	Multifamily	Cool Room	Wall Insulation 2x6 (WA) - Code	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	52	45	$1,772	5.0%	50%	$0.10	14	14
Washington	Multifamily	Cool Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	90	45	$5,542	65%	25%	$1.46	163	163
Washington	Multifamily	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	2	45	$198	95%	60%	$1.15	0.00	0.00
Washington	Multifamily	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	13	45	$7,074	95%	75%	$12.48	99	99
Washington	Multifamily	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	12	45	$6,771	95%	95%	$8.21	0.00	0.00
Washington	Multifamily	Cool Room	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	New	2	45	$153	90%	95%	$1.09	0.68	0.68
Washington	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	81	20	$960	95%	N/A	$1.19	15	15
Washington	Multifamily	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	15	40	$9,764	10%	100%	$11.48	0.20	0.21
Washington	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	32	30	$480	15%	90%	$0.78	1	1
Washington	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	27	9	$41	100%	N/A	$0.23	0.00	0.00
Washington	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	32	9	$308	100%	N/A	$1.47	0.00	0.00
Washington	Multifamily	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.58	45	$251	20%	65%	$4.06	0.02	0.02
Washington	Multifamily	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	1	45	$198	95%	60%	$0.76	0.00	0.00
Washington	Multifamily	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	12	45	$7,074	95%	75%	$8.28	2	2
Washington	Multifamily	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	8	45	$6,771	95%	95%	$5.46	0.00	0.00
Washington	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	2	2
Washington	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.20	0.20
Washington	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	40	40
Washington	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	1	1
Washington	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	13	13

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.67	0.67
Washington	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	160	11	$372	100%	N/A	$0.32	113	480
Washington	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	150	11	$343	100%	N/A	$0.32	0.00	0.00
Washington	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	39	11	$75	100%	N/A	$0.26	0.00	0.00
Washington	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	160	11	$372	100%	N/A	$0.32	5	17
Washington	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	150	11	$343	100%	N/A	$0.32	0.00	0.00
Washington	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	39	11	$75	100%	N/A	$0.26	0.00	0.00
Washington	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	72	20	$2	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	145	20	$22	100%	N/A	$0.02	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	170	20	$39	100%	N/A	$0.02	80	101
Washington	Multifamily	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	542	20	$129	17%	100%	$0.02	280	280
Washington	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	New	72	20	$2	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	145	20	$22	100%	N/A	$0.02	0.00	0.00
Washington	Multifamily	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	170	20	$39	100%	N/A	$0.02	6	7
Washington	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,185	18	$1,585	2.5%	95%	$0.13	39	39
Washington	Multifamily	Heat Central	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	26	45	$153	75%	95%	$0.38	26	26
Washington	Multifamily	Heat Central	Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	216	45	$600	75%	35%	$0.18	78	78
Washington	Multifamily	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	561	20	$243	100%	80%	$0.04	614	614

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Heat Central	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	373	20	$112	100%	60%	$0.03	0.00	0.00
Washington	Multifamily	Heat Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	27	18	$298	25%	75%	$0.98	7	7
Washington	Multifamily	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	36	45	$165	25%	85%	$0.40	9	9
Washington	Multifamily	Heat Central	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,112	45	$537	25%	50%	$0.04	175	175
Washington	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,874	20	$8,882	5.0%	N/A	$0.15	162	186
Washington	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	5,384	20	$7,386	0.0%	N/A	$0.14	0.00	0.00
Washington	Multifamily	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	194	11	$221	75%	50%	$0.16	94	94
Washington	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	197	30	$675	5.0%	90%	$0.20	11	11
Washington	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	671	11	$895	5.0%	95%	$0.17	40	40
Washington	Multifamily	Heat Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,159	45	$1,640	75%	25%	$0.05	772	772
Washington	Multifamily	Heat Central	Wall Insulation 2x6 (WA) - Code	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,813	45	$1,772	5.0%	50%	$0.04	116	116
Washington	Multifamily	Heat Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,130	45	$5,542	65%	25%	$0.34	218	218
Washington	Multifamily	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	59	45	$198	95%	60%	$0.26	0.00	0.00
Washington	Multifamily	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	179	45	$7,074	95%	75%	$2.76	0.00	0.00
Washington	Multifamily	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	294	45	$6,771	95%	95%	$1.76	310	310
Washington	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	707	18	$1,585	20%	95%	$0.22	6	6
Washington	Multifamily	Heat Central	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	New	45	45	$153	90%	95%	$0.26	1	1
Washington	Multifamily	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	266	45	$2,452	5.0%	95%	$0.80	0.46	0.46
Washington	Multifamily	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	182	45	$2,495	5.0%	95%	$1.18	0.00	0.00
Washington	Multifamily	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	1,056	20	$243	100%	80%	$0.02	29	29
Washington	Multifamily	Heat Central	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	709	20	$112	100%	60%	$0.02	0.00	0.00
Washington	Multifamily	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	168	40	$158	75%	25%	$0.07	1	1
Washington	Multifamily	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	59	45	$165	75%	85%	$0.24	1	1
Washington	Multifamily	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	294	40	$9,764	10%	100%	$2.62	0.41	0.41

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,502	20	$5,330	5.0%	N/A	$0.15	3	4
Washington	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	3,226	20	$4,278	0.0%	N/A	$0.13	0.00	0.00
Washington	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	117	30	$480	15%	90%	$0.24	0.48	0.48
Washington	Multifamily	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	23	45	$251	20%	65%	$0.87	0.10	0.10
Washington	Multifamily	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,593	20	$571	0.0%	95%	$0.04	0.00	0.00
Washington	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	400	11	$895	10%	95%	$0.28	1	1
Washington	Multifamily	Heat Central	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-6 Sheathing (Above WA Code - Multi Family Homes Only)	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	Savings Per Building	New	439	45	$289	50%	95%	$0.06	6	6
Washington	Multifamily	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	98	45	$198	95%	60%	$0.17	0.00	0.00
Washington	Multifamily	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	306	45	$7,074	95%	75%	$1.84	0.00	0.00
Washington	Multifamily	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	492	45	$6,771	95%	95%	$1.15	12	12
Washington	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	417	18	$1,585	2.5%	95%	$0.40	11	11
Washington	Multifamily	Heat Pump	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	13	45	$153	75%	95%	$0.99	11	11
Washington	Multifamily	Heat Pump	Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	125	45	$600	75%	35%	$0.42	38	38
Washington	Multifamily	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	206	20	$243	100%	80%	$0.12	192	192
Washington	Multifamily	Heat Pump	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	137	20	$112	100%	60%	$0.08	0.00	0.00
Washington	Multifamily	Heat Pump	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	9	18	$298	25%	75%	$3.19	2	2
Washington	Multifamily	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	10	45	$165	25%	85%	$1.38	2	2
Washington	Multifamily	Heat Pump	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	333	45	$537	25%	50%	$0.14	46	46
Washington	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	490	20	$1,496	100%	N/A	$0.31	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	343	20	$1,122	100%	N/A	$0.33	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	712	20	$2,244	100%	N/A	$0.32	137	176

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	257	20	$748	100%	N/A	$0.30	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,515	20	$9,533	13%	N/A	$0.64	55	68
Washington	Multifamily	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	57	11	$221	75%	50%	$0.54	23	23
Washington	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	91	5	$300	95%	65%	$0.77	66	66
Washington	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	18	30	$675	5.0%	90%	$3.40	0.91	0.91
Washington	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	324	11	$895	5.0%	95%	$0.38	16	16
Washington	Multifamily	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	70	5	$200	20%	75%	$0.67	12	12
Washington	Multifamily	Heat Pump	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,315	45	$1,640	75%	25%	$0.11	268	268
Washington	Multifamily	Heat Pump	Wall Insulation 2x6 (WA) - Code	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,592	45	$1,772	5.0%	50%	$0.10	41	41
Washington	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	715	20	$455	10%	95%	$0.06	80	80
Washington	Multifamily	Heat Pump	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	614	45	$5,542	65%	25%	$0.78	100	100
Washington	Multifamily	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	27	45	$198	95%	60%	$0.63	0.00	0.00
Washington	Multifamily	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	93	45	$7,074	95%	75%	$6.55	0.00	0.00
Washington	Multifamily	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	137	45	$6,771	95%	95%	$4.28	122	122
Washington	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	228	18	$1,585	20%	95%	$0.74	1	1
Washington	Multifamily	Heat Pump	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	New	20	45	$153	90%	95%	$0.66	0.55	0.55
Washington	Multifamily	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	87	45	$2,452	5.0%	95%	$2.44	0.12	0.12
Washington	Multifamily	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	61	45	$2,495	5.0%	95%	$3.54	0.00	0.00
Washington	Multifamily	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	307	20	$243	100%	80%	$0.08	7	7
Washington	Multifamily	Heat Pump	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	206	20	$112	100%	60%	$0.06	0.00	0.00
Washington	Multifamily	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	75	40	$158	75%	25%	$0.19	0.43	0.43
Washington	Multifamily	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	13	45	$165	75%	85%	$1.04	0.25	0.25
Washington	Multifamily	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	133	40	$9,764	10%	100%	$6.48	0.17	0.17

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	276	20	$1,051	100%	N/A	$0.39	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	188	20	$788	100%	N/A	$0.42	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	409	20	$1,577	100%	N/A	$0.39	7	7
Washington	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	143	20	$525	100%	N/A	$0.37	0.00	0.00
Washington	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	859	20	$6,805	25%	N/A	$0.80	6	6
Washington	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	52	5	$300	95%	65%	$1.35	1	1
Washington	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	10	30	$480	15%	90%	$4.20	0.03	0.03
Washington	Multifamily	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	9	45	$251	20%	65%	$2.38	0.03	0.03
Washington	Multifamily	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	452	20	$571	0.0%	95%	$0.13	0.00	0.00
Washington	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	181	11	$895	10%	95%	$0.69	0.63	0.63
Washington	Multifamily	Heat Pump	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-6 Sheathing (Above WA Code - Multi Family Homes Only)	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	Savings Per Building	New	144	45	$289	50%	95%	$0.17	1	1
Washington	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	399	20	$455	10%	95%	$0.12	1	1
Washington	Multifamily	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	36	45	$198	95%	60%	$0.47	0.00	0.00
Washington	Multifamily	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	128	45	$7,074	95%	75%	$4.78	0.00	0.00
Washington	Multifamily	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	181	45	$6,771	95%	95%	$3.25	4	4
Washington	Multifamily	Heat Room	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	25	45	$153	75%	95%	$0.40	127	127
Washington	Multifamily	Heat Room	Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	205	45	$600	75%	35%	$0.19	378	378
Washington	Multifamily	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	534	20	$243	100%	80%	$0.05	2,974	2,974
Washington	Multifamily	Heat Room	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	Existing	355	20	$112	100%	60%	$0.03	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	2,214	20	$1,166	50%	N/A	$0.05	2,925	3,399
Washington	Multifamily	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	34	45	$165	25%	85%	$0.42	48	48
Washington	Multifamily	Heat Room	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,059	45	$537	25%	50%	$0.04	879	879
Washington	Multifamily	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	185	11	$221	75%	50%	$0.17	454	454
Washington	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	188	30	$675	5.0%	90%	$0.20	54	54
Washington	Multifamily	Heat Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,008	45	$1,640	75%	25%	$0.05	3,660	3,660
Washington	Multifamily	Heat Room	Wall Insulation 2x6 (WA) - Code	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,631	45	$1,772	5.0%	50%	$0.04	553	553
Washington	Multifamily	Heat Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,076	45	$5,542	65%	25%	$0.35	1,056	1,056
Washington	Multifamily	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	56	45	$198	95%	60%	$0.27	0.00	0.00
Washington	Multifamily	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	171	45	$7,074	95%	75%	$2.87	0.00	0.00
Washington	Multifamily	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	280	45	$6,771	95%	95%	$1.84	1,503	1,503
Washington	Multifamily	Heat Room	Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Savings Per Building	New	44	45	$153	90%	95%	$0.27	5	5
Washington	Multifamily	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	258	45	$2,452	5.0%	95%	$0.82	1	1
Washington	Multifamily	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	177	45	$2,495	5.0%	95%	$1.22	0.00	0.00
Washington	Multifamily	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	1,022	20	$243	100%	80%	$0.02	104	104
Washington	Multifamily	Heat Room	Door (WA) - Above Code	R-5 Door (Above WA Code - Multi Family Homes Only)	R-2.5 Door (WA Code - Multi Family Homes Only)	Savings Per Building	New	686	20	$112	100%	60%	$0.02	0.00	0.00
Washington	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	2,214	20	$1,000	95%	N/A	$0.05	321	323
Washington	Multifamily	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	57	45	$165	75%	85%	$0.25	4	4
Washington	Multifamily	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	285	40	$9,764	10%	100%	$2.69	1	1
Washington	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	114	30	$480	15%	90%	$0.24	1	1
Washington	Multifamily	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	22	45	$251	20%	65%	$0.90	0.35	0.35
Washington	Multifamily	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,542	20	$571	0.0%	95%	$0.04	0.00	0.00
Washington	Multifamily	Heat Room	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-6 Sheathing (Above WA Code - Multi Family Homes Only)	R-13 + R-6 Sheathing (WA Code - Multi Family Homes Only)	Savings Per Building	New	425	45	$289	50%	95%	$0.06	23	23
Washington	Multifamily	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	95	45	$198	95%	60%	$0.17	0.00	0.00
Washington	Multifamily	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	297	45	$7,074	95%	75%	$1.89	0.00	0.00
Washington	Multifamily	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	476	45	$6,771	95%	95%	$1.19	45	45

Table C-2.1. Residential Measure Details

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Washington	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	108	108
Washington	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	1	1
Washington	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$-0.04	54	54
Washington	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	901	901
Washington	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$-0.04	1	1
Washington	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	35	35
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	85%	N/A	$-0.01	0.00	2,159
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	58	1,222
Washington	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$2.07	15	15
Washington	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	5.0%	95%	$3.50	20	20
Washington	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.50	8	8
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	85%	N/A	$-0.01	0.00	47
Washington	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	9	27
Washington	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$2.07	0.61	0.62
Washington	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	5.0%	95%	$3.50	0.82	0.83
Washington	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.50	0.32	0.33
Washington	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	344	344
Washington	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	18	18

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Washington	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	12	12
Washington	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	1	1
Washington	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	11	11
Washington	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	314	314
Washington	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.44	0.44
Washington	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	12	12
Washington	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	117	117
Washington	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$94	100%	N/A	$0.07	519	667
Washington	Multifamily	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	724	20	$129	14%	100%	$0.02	2,082	2,082
Washington	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Multifamily	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$94	100%	N/A	$0.07	49	49
Washington	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	500	500
Washington	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	19	19
Washington	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	281	281
Washington	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	6	6
Washington	Multifamily	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	218	20	$120	100%	N/A	$0.06	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	27	13	$361	100%	N/A	$2.60	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,209	13	$516	100%	N/A	$0.07	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,222	13	$1,042	100%	N/A	$0.13	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,244	13	$867	100%	N/A	$0.11	1,005	1,128
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	27	13	$361	100%	N/A	$2.60	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,209	13	$516	100%	N/A	$0.07	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,222	13	$1,042	100%	N/A	$0.13	0.00	0.00
Washington	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,244	13	$867	100%	N/A	$0.11	48	48
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	72	14	$105	52%	87%	$-0.24	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	9	14	$28	52%	87%	$-2.69	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	54	14	$35	52%	87%	$-0.47	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	81	14	$102	52%	95%	$-0.22	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$209	52%	99%	$-0.05	0.00	9
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	29	14	$103	52%	99%	$-0.59	0.00	1
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	19	14	$75	52%	99%	$-1.05	5	6
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	24	12	$106	33%	70%	$0.58	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$36	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	42	12	$184	33%	85%	$0.58	0.00	0.72
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	26	12	$114	33%	85%	$0.57	4	6
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	16	12	$70	33%	65%	$0.57	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	268	40	$935	29%	90%	$0.31	50	50
Washington	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	59	10	$3	100%	25%	$-0.03	10	10
Washington	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	51	10	$4	50%	65%	$-0.02	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	125	10	$5	50%	95%	$-0.03	42	42
Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	124	10	$39	100%	65%	$0.02	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	198	10	$42	100%	85%	$0.01	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	275	10	$45	100%	90%	$-0.00	176	176
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	0.98	0.98
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	16	16
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	2	2
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	14	14
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	72	14	$105	52%	87%	$-0.24	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	9	14	$28	52%	87%	$-2.69	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	54	14	$35	52%	87%	$-0.47	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	81	14	$102	52%	95%	$-0.22	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$209	52%	99%	$-0.05	0.00	0.24
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	29	14	$103	52%	99%	$-0.59	0.00	0.04
Washington	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	19	14	$75	52%	99%	$-1.05	0.13	0.13
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	24	12	$106	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$36	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	42	12	$184	33%	85%	$0.58	0.00	0.01
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	26	12	$114	33%	85%	$0.57	0.14	0.14
Washington	Multifamily	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	16	12	$70	33%	65%	$0.57	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	284	40	$935	59%	90%	$0.29	1	1
Washington	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	51	10	$4	50%	65%	$-0.02	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	125	10	$5	50%	95%	$-0.03	1	1
Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	124	10	$39	100%	65%	$0.02	0.00	0.00

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Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	198	10	$42	100%	85%	$0.01	0.00	0.00
Washington	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	275	10	$45	100%	90%	$-0.00	5	5
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.02	0.02
Washington	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.07	0.07
Washington	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	721	13	$1,728	0.0%	N/A	$0.34	0.00	0.00
Washington	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,123	13	$1,655	0.0%	N/A	$0.21	0.00	0.00
Washington	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	65	13	$72	100%	N/A	$0.14	0.00	79
Washington	Multifamily	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	27	13	$30	100%	N/A	$0.14	0.00	0.00
Washington	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	721	13	$1,728	0.0%	N/A	$0.34	0.00	0.00
Washington	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,123	13	$1,655	0.0%	N/A	$0.21	0.00	0.00
Washington	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	65	13	$72	100%	N/A	$0.14	0.00	2
Washington	Multifamily	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	27	13	$30	100%	N/A	$0.14	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	72	14	$105	52%	87%	$-0.24	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	9	14	$28	52%	87%	$-2.69	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	54	14	$35	52%	87%	$-0.47	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	81	14	$102	52%	95%	$-0.22	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$209	52%	99%	$-0.05	0.00	113
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	29	14	$103	52%	99%	$-0.59	0.00	21
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	19	14	$75	52%	99%	$-1.05	109	109
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	24	12	$106	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	8	12	$36	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	42	12	$184	33%	85%	$0.58	0.00	8
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	26	12	$114	33%	85%	$0.57	99	100
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	16	12	$70	33%	65%	$0.57	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	266	40	$935	29%	90%	$0.31	1,004	1,004
Washington	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	59	10	$3	100%	25%	$-0.03	210	210
Washington	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	51	10	$4	50%	65%	$-0.02	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	125	10	$5	50%	95%	$-0.03	848	848
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	124	10	$39	100%	65%	$0.02	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	198	10	$42	100%	85%	$0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	275	10	$45	100%	90%	$-0.00	3,526	3,526
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	19	19
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	325	325
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	50	50
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	294	294
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	72	14	$105	52%	87%	$-0.24	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	9	14	$28	52%	87%	$-2.69	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	54	14	$35	52%	87%	$-0.47	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	81	14	$102	52%	95%	$-0.22	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$209	52%	99%	$-0.05	0.00	6
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	29	14	$103	52%	99%	$-0.59	0.00	1
Washington	Multifamily	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	19	14	$75	52%	99%	$-1.05	3	3
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	24	12	$106	33%	70%	$0.58	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	8	12	$36	33%	70%	$0.58	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	42	12	$184	33%	85%	$0.58	0.00	0.44
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	26	12	$114	33%	85%	$0.57	3	3
Washington	Multifamily	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	16	12	$70	33%	65%	$0.57	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	266	40	$935	59%	90%	$0.31	25	25
Washington	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	51	10	$4	50%	65%	$-0.02	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	125	10	$5	50%	95%	$-0.03	33	33
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	124	10	$39	100%	65%	$0.02	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	198	10	$42	100%	85%	$0.01	0.00	0.00
Washington	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	275	10	$45	100%	90%	$-0.00	138	138
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.74	0.74
Washington	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	1	1
Washington	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	948	948
Washington	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	19	19
Washington	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.49	56	56
Washington	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.49	3	3
Washington	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	172	18	$1,585	13%	95%	$0.26	990	990
Washington	Single Family	Cool Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	9	45	$302	75%	95%	$1.92	325	325
Washington	Single Family	Cool Central	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	141	45	$1,339	75%	33%	$0.51	1,679	1,679

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Washington	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	350	15	$2,228	100%	N/A	$0.74	0.00	0.00
Washington	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	228	15	$1,114	100%	N/A	$0.57	0.00	0.00
Washington	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	485	15	$3,714	100%	N/A	$0.89	10,348	12,953
Washington	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,476	15	$-2644.8421	6.0%	N/A	$-0.21	482	604
Washington	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,406	15	$-1958.6315	3.0%	N/A	$-0.16	1,145	1,433
Washington	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	9	20	$117	50%	95%	$1.27	0.13	0.13
Washington	Single Family	Cool Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	13	18	$896	25%	74%	$3.58	121	121
Washington	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	70	5	$300	95%	65%	$1.00	2,118	2,118
Washington	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	175	30	$675	40%	90%	$0.25	2,872	2,872
Washington	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	117	11	$895	25%	95%	$0.35	1,216	1,216
Washington	Single Family	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	54	5	$200	95%	65%	$0.87	1,612	1,612
Washington	Single Family	Cool Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	211	45	$2,186	75%	25%	$0.06	1,667	1,667
Washington	Single Family	Cool Central	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	253	45	$2,572	5.0%	50%	$0.05	261	261
Washington	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	258	20	$455	50%	95%	$0.18	5,942	5,942
Washington	Single Family	Cool Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	515	45	$9,844	65%	23%	$1.00	2,889	2,889
Washington	Single Family	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	15	45	$352	95%	60%	$0.93	0.00	0.00
Washington	Single Family	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	79	45	$12,565	95%	75%	$8.69	2,042	2,042
Washington	Single Family	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	75	45	$12,027	95%	95%	$6.92	0.00	0.00
Washington	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	86	18	$1,585	45%	95%	$0.68	55	55
Washington	Single Family	Cool Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	6	45	$302	90%	95%	$1.90	7	7

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Washington	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	195	15	$1,532	100%	N/A	$0.91	0.00	0.00
Washington	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	127	15	$766	100%	N/A	$0.70	0.00	0.00
Washington	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	268	15	$2,554	100%	N/A	$1.10	403	406
Washington	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	784	15	$-1787.079	6.0%	N/A	$-0.26	24	24
Washington	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	735	15	$-1315.3092	6.0%	N/A	$-0.21	86	87
Washington	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	9	20	$117	50%	95%	$1.27	0.00	0.00
Washington	Single Family	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	55	40	$282	75%	25%	$0.20	12	12
Washington	Single Family	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	43	40	$16,863	10%	100%	$14.95	2	2
Washington	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	35	5	$300	95%	65%	$1.98	38	38
Washington	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	88	30	$480	65%	90%	$0.38	58	58
Washington	Single Family	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$447	20%	65%	$7.47	0.18	0.18
Washington	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	59	11	$895	50%	95%	$0.85	42	42
Washington	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	130	20	$455	50%	95%	$0.35	76	76
Washington	Single Family	Cool Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	6	45	$352	95%	60%	$0.94	0.00	0.00
Washington	Single Family	Cool Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	47	45	$12,565	95%	75%	$9.17	31	31
Washington	Single Family	Cool Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	33	45	$12,027	95%	95%	$7.02	0.00	0.00
Washington	Single Family	Cool Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	2	45	$302	75%	95%	$4.26	27	27
Washington	Single Family	Cool Room	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	34	45	$1,339	75%	33%	$1.16	141	141

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	91	20	$1,166	50%	N/A	$1.06	259	317
Washington	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	43	30	$675	40%	90%	$0.69	248	248
Washington	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	34	9	$41	100%	N/A	$0.19	0.00	0.00
Washington	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	41	9	$308	100%	N/A	$1.16	0.00	42
Washington	Single Family	Cool Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	52	45	$2,186	75%	25%	$0.17	149	149
Washington	Single Family	Cool Room	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	62	45	$2,572	5.0%	50%	$0.16	23	23
Washington	Single Family	Cool Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	127	45	$9,844	65%	23%	$2.04	283	283
Washington	Single Family	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	3	45	$352	95%	60%	$1.57	0.00	0.00
Washington	Single Family	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	19	45	$12,565	95%	75%	$16.89	200	200
Washington	Single Family	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	18	45	$12,027	95%	95%	$11.26	0.00	0.00
Washington	Single Family	Cool Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	2	45	$302	90%	95%	$2.79	0.98	0.98
Washington	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	73	20	$960	95%	N/A	$1.33	17	17
Washington	Single Family	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	16	40	$16,863	10%	100%	$20.67	0.33	0.33
Washington	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	33	30	$480	65%	90%	$0.78	8	8
Washington	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	27	9	$41	100%	N/A	$0.23	0.00	0.00
Washington	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	33	9	$308	100%	N/A	$1.45	0.00	0.00
Washington	Single Family	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.46	45	$447	20%	65%	$8.85	0.02	0.02
Washington	Single Family	Cool Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	2	45	$352	95%	60%	$1.15	0.00	0.00
Washington	Single Family	Cool Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	17	45	$12,565	95%	75%	$12.34	5	5
Washington	Single Family	Cool Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	12	45	$12,027	95%	95%	$8.25	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	18	18
Washington	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	1	1
Washington	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	191	191
Washington	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	6	6
Washington	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	91	91
Washington	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	4	4
Washington	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	220	11	$372	100%	N/A	$0.24	704	2,972
Washington	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	207	11	$343	100%	N/A	$0.23	0.00	0.00
Washington	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	54	11	$75	100%	N/A	$0.19	0.00	0.00
Washington	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	220	11	$372	100%	N/A	$0.24	35	110
Washington	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	207	11	$343	100%	N/A	$0.23	0.00	0.00
Washington	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	54	11	$75	100%	N/A	$0.19	0.00	0.00
Washington	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	72	20	$2	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	145	20	$22	100%	N/A	$0.02	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	Existing	170	20	$39	100%	N/A	$0.02	1,133	1,422
Washington	Single Family	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	542	20	$129	17%	100%	$0.02	3,939	3,939
Washington	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	109	20	$3	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Installation	New	72	20	$2	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	111	20	$6	100%	N/A	$0.01	0.00	0.00
Washington	Single Family	Freezer	Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	145	20	$22	100%	N/A	$0.02	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Freezer	Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Installation	New	170	20	$39	100%	N/A	$0.02	97	101
Washington	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,950	18	$1,585	13%	95%	$0.08	1,203	1,203
Washington	Single Family	Heat Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	29	45	$302	75%	95%	$0.77	106	106
Washington	Single Family	Heat Central	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	463	45	$1,339	75%	33%	$0.22	591	591
Washington	Single Family	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	101	20	$65	50%	80%	$0.07	205	205
Washington	Single Family	Heat Central	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	200	20	$56	50%	60%	$0.03	302	302
Washington	Single Family	Heat Central	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	97	18	$896	25%	74%	$0.92	94	94
Washington	Single Family	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	62	45	$294	25%	85%	$0.41	64	64
Washington	Single Family	Heat Central	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,832	45	$955	25%	45%	$0.05	985	985
Washington	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	9,706	20	$11,523	50%	N/A	$0.12	12,531	14,090
Washington	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	9,010	20	$9,582	0.0%	N/A	$0.11	0.00	0.00
Washington	Single Family	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	354	11	$393	75%	50%	$0.15	669	669
Washington	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	325	30	$675	40%	90%	$0.15	577	577
Washington	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,105	11	$895	25%	95%	$0.11	1,286	1,286
Washington	Single Family	Heat Central	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	4,607	45	$2,186	75%	25%	$0.04	4,246	4,246
Washington	Single Family	Heat Central	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	5,675	45	$2,572	5.0%	50%	$0.04	659	659
Washington	Single Family	Heat Central	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,166	45	$9,844	65%	23%	$0.35	1,462	1,462
Washington	Single Family	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	116	45	$352	95%	60%	$0.25	0.00	0.00
Washington	Single Family	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	351	45	$12,565	95%	75%	$2.78	0.00	0.00
Washington	Single Family	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	579	45	$12,027	95%	95%	$1.69	2,318	2,318
Washington	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,055	18	$1,585	45%	95%	$0.15	69	69

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Heat Central	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	53	45	$302	90%	95%	$0.46	5	5
Washington	Single Family	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	111	45	$4,357	25%	95%	$3.40	3	3
Washington	Single Family	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	1	45	$4,432	25%	95%	$239.44	0.00	0.00
Washington	Single Family	Heat Central	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	184	20	$65	50%	80%	$0.04	8	8
Washington	Single Family	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	324	40	$282	75%	25%	$0.07	7	7
Washington	Single Family	Heat Central	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	93	45	$294	75%	85%	$0.27	6	6
Washington	Single Family	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	439	40	$16,863	10%	100%	$3.23	2	2
Washington	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	5,237	20	$6,765	50%	N/A	$0.13	205	224
Washington	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,840	20	$5,430	0.0%	N/A	$0.11	0.00	0.00
Washington	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	175	30	$480	65%	90%	$0.20	11	11
Washington	Single Family	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	30	45	$447	20%	65%	$1.24	0.47	0.47
Washington	Single Family	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,789	20	$1,016	85%	95%	$0.04	243	243
Washington	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	597	11	$895	50%	95%	$0.20	34	34
Washington	Single Family	Heat Central	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	401	45	$1,241	50%	95%	$0.27	16	16
Washington	Single Family	Heat Central	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	177	45	$352	95%	60%	$0.17	0.00	0.00
Washington	Single Family	Heat Central	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	553	45	$12,565	95%	75%	$1.89	0.00	0.00
Washington	Single Family	Heat Central	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	892	45	$12,027	95%	95%	$1.15	62	62
Washington	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	688	18	$1,585	13%	95%	$0.24	1,082	1,082
Washington	Single Family	Heat Pump	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	16	45	$302	75%	95%	$1.58	155	155
Washington	Single Family	Heat Pump	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	261	45	$1,339	75%	33%	$0.45	851	851

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	36	20	$65	50%	80%	$0.18	190	190
Washington	Single Family	Heat Pump	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	72	20	$56	50%	60%	$0.08	281	281
Washington	Single Family	Heat Pump	Duct Sealing and Insulation - RTF	Code Duct Sealing and Insulation - R-11	Existing Duct Sealing and Insulation - R-4.2	Savings Per Building	Existing	33	18	$896	25%	74%	$2.80	83	83
Washington	Single Family	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	16	45	$294	25%	85%	$1.54	45	45
Washington	Single Family	Heat Pump	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	513	45	$955	25%	45%	$0.16	740	740
Washington	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	696	20	$1,941	100%	N/A	$0.28	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	456	20	$1,455	100%	N/A	$0.32	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,059	20	$2,911	100%	N/A	$0.28	1,991	2,752
Washington	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	348	20	$970	100%	N/A	$0.28	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	2,508	20	$12,368	20%	N/A	$0.50	1,538	2,067
Washington	Single Family	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	114	11	$393	75%	50%	$0.48	547	547
Washington	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	144	5	$300	95%	65%	$0.49	1,169	1,169
Washington	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	28	30	$675	40%	90%	$2.19	130	130
Washington	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	522	11	$895	25%	95%	$0.24	1,557	1,557
Washington	Single Family	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	110	5	$200	20%	75%	$0.43	217	217
Washington	Single Family	Heat Pump	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,879	45	$2,186	75%	25%	$0.10	4,341	4,341
Washington	Single Family	Heat Pump	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,324	45	$2,572	5.0%	50%	$0.10	682	682
Washington	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	1,152	20	$455	50%	95%	$0.04	7,247	7,247
Washington	Single Family	Heat Pump	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,155	45	$9,844	65%	23%	$0.74	1,850	1,850

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	53	45	$352	95%	60%	$0.58	0.00	0.00
Washington	Single Family	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	180	45	$12,565	95%	75%	$6.05	0.00	0.00
Washington	Single Family	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	265	45	$12,027	95%	95%	$3.93	2,512	2,512
Washington	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	352	18	$1,585	45%	95%	$0.48	59	59
Washington	Single Family	Heat Pump	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	24	45	$302	90%	95%	$1.08	7	7
Washington	Single Family	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	37	45	$4,357	25%	95%	$10.12	2	2
Washington	Single Family	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	3	45	$4,432	25%	95%	$126.14	0.00	0.00
Washington	Single Family	Heat Pump	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	55	20	$65	50%	80%	$0.12	7	7
Washington	Single Family	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	140	40	$282	75%	25%	$0.18	8	8
Washington	Single Family	Heat Pump	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	21	45	$294	75%	85%	$1.20	4	4
Washington	Single Family	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	197	40	$16,863	10%	100%	$7.55	3	3
Washington	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	397	20	$1,334	100%	N/A	$0.34	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	267	20	$1,000	100%	N/A	$0.38	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	595	20	$2,001	100%	N/A	$0.34	82	80
Washington	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	205	20	$667	100%	N/A	$0.33	0.00	0.00
Washington	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	1,365	20	$8,637	40%	N/A	$0.64	164	157
Washington	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	74	5	$300	95%	65%	$0.96	20	20
Washington	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	14	30	$480	65%	90%	$3.02	2	2
Washington	Single Family	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	11	45	$447	20%	65%	$3.32	0.49	0.49

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	850	20	$1,016	85%	95%	$0.12	207	207
Washington	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	268	11	$895	50%	95%	$0.46	44	44
Washington	Single Family	Heat Pump	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	136	45	$1,241	50%	95%	$0.79	16	16
Washington	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	591	20	$455	50%	95%	$0.08	92	92
Washington	Single Family	Heat Pump	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	67	45	$352	95%	60%	$0.45	0.00	0.00
Washington	Single Family	Heat Pump	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	238	45	$12,565	95%	75%	$4.58	0.00	0.00
Washington	Single Family	Heat Pump	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	337	45	$12,027	95%	95%	$3.09	65	65
Washington	Single Family	Heat Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	27	45	$302	75%	95%	$0.82	112	112
Washington	Single Family	Heat Room	Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Savings Per Building	Existing	431	45	$1,339	75%	33%	$0.23	623	623
Washington	Single Family	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	94	20	$65	50%	80%	$0.07	217	217
Washington	Single Family	Heat Room	Door (WA) - Code	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	R-2.5 Door (Below WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	Existing	186	20	$56	50%	60%	$0.03	320	320
Washington	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	3,934	20	$1,166	50%	N/A	$0.03	4,541	5,124
Washington	Single Family	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	Existing	58	45	$294	25%	85%	$0.44	71	71
Washington	Single Family	Heat Room	Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,703	45	$955	25%	45%	$0.05	1,089	1,089
Washington	Single Family	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	329	11	$393	75%	50%	$0.17	696	696
Washington	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	302	30	$675	40%	90%	$0.16	608	608
Washington	Single Family	Heat Room	Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Savings Per Building	Existing	4,283	45	$2,186	75%	25%	$0.04	4,462	4,462
Washington	Single Family	Heat Room	Wall Insulation 2x6 (WA) - Code	R-21 (WA Code - Single Family and Manufactured Homes Only)	R-0 (Existing Insulation)	Savings Per Building	Existing	5,276	45	$2,572	5.0%	50%	$0.04	693	693
Washington	Single Family	Heat Room	Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,014	45	$9,844	65%	23%	$0.38	1,569	1,569
Washington	Single Family	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	107	45	$352	95%	60%	$0.27	0.00	0.00
Washington	Single Family	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	327	45	$12,565	95%	75%	$2.97	0.00	0.00
Washington	Single Family	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	Existing	539	45	$12,027	95%	95%	$1.81	2,487	2,487

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Heat Room	Ceiling Insulation (WA) - Above Code	R-60 (Above WA Code - Single Family and Manufactured Homes Only)	R-49 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	51	45	$302	90%	95%	$0.48	4	4
Washington	Single Family	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	106	45	$4,357	25%	95%	$3.54	2	2
Washington	Single Family	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	1	45	$4,432	25%	95%	$249.45	0.00	0.00
Washington	Single Family	Heat Room	Door (WA) - Above Code	R-10 Door (Above WA Code - Single Family and Manufactured Homes Only)	R-5 Door (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	176	20	$65	50%	80%	$0.04	6	6
Washington	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	3,934	20	$1,000	95%	N/A	$0.03	404	408
Washington	Single Family	Heat Room	Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Savings Per Building	New	90	45	$294	75%	85%	$0.28	5	5
Washington	Single Family	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	421	40	$16,863	10%	100%	$3.36	1	1
Washington	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	168	30	$480	65%	90%	$0.21	9	9
Washington	Single Family	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	29	45	$447	20%	65%	$1.29	0.38	0.38
Washington	Single Family	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,677	20	$1,016	85%	95%	$0.04	197	197
Washington	Single Family	Heat Room	Wall Insulation 2x6 (WA) - Above Code	R-21 + R-5 Sheathing (Above WA Code - Single Family and Manufactured Homes Only)	R-21 (WA Code - Single Family and Manufactured Homes Only)	Savings Per Building	New	384	45	$1,241	50%	95%	$0.28	13	13
Washington	Single Family	Heat Room	Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	170	45	$352	95%	60%	$0.18	0.00	0.00
Washington	Single Family	Heat Room	Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	531	45	$12,565	95%	75%	$1.96	0.00	0.00
Washington	Single Family	Heat Room	Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Savings Per Building	New	856	45	$12,027	95%	95%	$1.20	51	51
Washington	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	483	483
Washington	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	5	5
Washington	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	22	7	$1	45%	N/A	$-0.04	349	349
Washington	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	24	12	$37	55%	N/A	$0.15	5,791	5,791
Washington	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	22	7	$1	45%	N/A	$-0.04	12	12
Washington	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	24	12	$37	55%	N/A	$0.15	225	225
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	23	5	$1	85%	N/A	$-0.01	0.00	13,874

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Washington	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	26	12	$21	15%	N/A	$0.08	366	7,849
Washington	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$2.07	99	99
Washington	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	2	10	$68	10%	95%	$3.50	263	263
Washington	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	2	10	$68	2.3%	85%	$3.50	52	52
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	6	2	$0.91	100%	N/A	$-0.03	0.00	0.00
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	100%	N/A	$-0.02	0.00	0.00
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	23	5	$1	85%	N/A	$-0.01	0.00	305
Washington	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	26	12	$21	15%	N/A	$0.08	58	177
Washington	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$2.07	3	4
Washington	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	2	10	$68	10%	95%	$3.50	10	10
Washington	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	2	10	$68	2.3%	85%	$3.50	2	2
Washington	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	1,237	1,237
Washington	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	65	65
Washington	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	76	76
Washington	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	11	11
Washington	Single Family	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Multifunction Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	40	40
Washington	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	1,138	1,138
Washington	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	1	1
Washington	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	45	45
Washington	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	Existing	440	10	$175	40%	N/A	$0.06	0.00	0.00
Washington	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	Existing	1,170	10	$750	75%	N/A	$0.09	1,519	1,519

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Washington	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	New	440	10	$175	40%	N/A	$0.06	0.00	0.00
Washington	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	New	1,170	10	$750	75%	N/A	$0.09	68	68
Washington	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	595	595
Washington	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.02	0.02
Washington	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	146	20	$94	100%	N/A	$0.07	1,723	2,504
Washington	Single Family	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	724	20	$129	19%	100%	$0.02	10,984	10,984
Washington	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	41	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	73	20	$17	100%	N/A	$0.02	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	105	20	$32	100%	N/A	$0.03	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	129	20	$55	100%	N/A	$0.04	0.00	0.00
Washington	Single Family	Refrigerator	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	146	20	$94	100%	N/A	$0.07	194	194
Washington	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	1,762	1,762
Washington	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	67	67
Washington	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	975	975
Washington	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	23	23
Washington	Single Family	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	387	20	$120	100%	N/A	$0.03	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	37	13	$361	100%	N/A	$1.90	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,661	13	$516	100%	N/A	$0.05	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,678	13	$1,042	100%	N/A	$0.09	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,709	13	$867	100%	N/A	$0.08	3,906	4,558
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	37	13	$361	100%	N/A	$1.90	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater > 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,661	13	$516	100%	N/A	$0.05	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,678	13	$1,042	100%	N/A	$0.09	0.00	0.00
Washington	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,709	13	$867	100%	N/A	$0.08	183	182
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	99	14	$105	97%	88%	$-0.29	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	13	14	$28	97%	88%	$-2.79	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	74	14	$35	97%	87%	$-0.49	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	111	14	$102	97%	73%	$-0.26	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$209	97%	95%	$-0.12	0.00	67
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	40	14	$103	97%	95%	$-0.70	0.00	11
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	27	14	$75	97%	95%	$-1.17	40	47
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	32	12	$106	68%	62%	$0.42	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$36	68%	62%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	57	12	$184	68%	85%	$0.42	0.01	6
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	35	12	$114	68%	85%	$0.41	41	52

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	21	12	$70	68%	65%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	368	40	$935	29%	90%	$0.22	209	209
Washington	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	81	10	$5	100%	25%	$-0.02	43	43
Washington	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	71	10	$7	75%	65%	$-0.02	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	172	10	$8	75%	95%	$-0.03	263	263
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	253	10	$59	100%	65%	$0.02	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	405	10	$63	100%	85%	$0.00	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	562	10	$68	100%	90%	$-0.00	1,086	1,086
Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	2	2
Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	41	41
Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	6	6
Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	37	37
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	99	14	$105	97%	88%	$-0.29	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	13	14	$28	97%	88%	$-2.79	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	74	14	$35	97%	87%	$-0.49	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	111	14	$102	97%	73%	$-0.26	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$209	97%	95%	$-0.12	0.00	1
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	40	14	$103	97%	95%	$-0.70	0.00	0.34
Washington	Single Family	Water Heat Gt 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	27	14	$75	97%	95%	$-1.17	1	1
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	32	12	$106	68%	62%	$0.42	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$36	68%	62%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	57	12	$184	68%	85%	$0.42	0.00	0.14
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	35	12	$114	68%	85%	$0.41	1	1
Washington	Single Family	Water Heat Gt 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	21	12	$70	68%	65%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	390	40	$935	59%	90%	$0.21	4	4
Washington	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	71	10	$7	75%	65%	$-0.02	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	172	10	$8	75%	95%	$-0.03	7	7
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	253	10	$59	100%	65%	$0.02	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	405	10	$63	100%	85%	$0.00	0.00	0.00
Washington	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	562	10	$68	100%	90%	$-0.00	32	32
Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.07	0.07

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Washington	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.19	0.19
Washington	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	990	13	$1,728	59%	N/A	$0.24	9,762	11,668
Washington	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,543	13	$1,655	59%	N/A	$0.15	22,518	26,796
Washington	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	89	13	$72	100%	N/A	$0.10	0.00	0.00
Washington	Single Family	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	38	13	$30	100%	N/A	$0.10	0.00	0.00
Washington	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater = 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	990	13	$1,728	59%	N/A	$0.24	458	458
Washington	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater = 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,543	13	$1,655	59%	N/A	$0.15	1,056	1,053
Washington	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	89	13	$72	100%	N/A	$0.10	0.00	0.00
Washington	Single Family	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater = 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	38	13	$30	100%	N/A	$0.10	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	99	14	$105	97%	88%	$-0.29	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	13	14	$28	97%	88%	$-2.79	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	74	14	$35	97%	87%	$-0.49	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	111	14	$102	97%	73%	$-0.26	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$209	97%	95%	$-0.12	0.00	777
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	Existing	40	14	$103	97%	95%	$-0.70	0.00	138

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	Existing	27	14	$75	97%	95%	$-1.17	511	579
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	32	12	$106	68%	62%	$0.42	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$36	68%	62%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	57	12	$184	68%	85%	$0.42	0.13	69
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	35	12	$114	68%	85%	$0.41	532	635
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	Existing	21	12	$70	68%	65%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	366	40	$935	29%	90%	$0.23	2,648	2,648
Washington	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	81	10	$5	100%	25%	$-0.02	554	554
Washington	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	71	10	$7	75%	65%	$-0.02	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	172	10	$8	75%	95%	$-0.03	3,356	3,356
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	253	10	$59	100%	65%	$0.02	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	405	10	$63	100%	85%	$0.00	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	Existing	562	10	$68	100%	90%	$-0.00	13,835	13,835
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	31	31
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	529	529
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	83	83

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	481	481
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2016	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	99	14	$105	97%	88%	$-0.29	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Market Standard 2018	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	13	14	$28	97%	88%	$-2.79	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	74	14	$35	97%	87%	$-0.49	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	111	14	$102	97%	73%	$-0.26	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$209	97%	95%	$-0.12	0.00	25
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Savings Per Building	New	40	14	$103	97%	95%	$-0.70	0.00	4
Washington	Single Family	Water Heat Le 55 Gal	Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Savings Per Building	New	27	14	$75	97%	95%	$-1.17	14	14
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	32	12	$106	68%	62%	$0.42	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$36	68%	62%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	57	12	$184	68%	85%	$0.42	0.00	2
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	35	12	$114	68%	85%	$0.41	17	17
Washington	Single Family	Water Heat Le 55 Gal	Dishwasher - RTF Market Standard 2014	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Savings Per Building	New	21	12	$70	68%	65%	$0.41	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	366	40	$935	59%	90%	$0.23	57	57
Washington	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	71	10	$7	75%	65%	$-0.02	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	172	10	$8	75%	95%	$-0.03	111	111
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	253	10	$59	100%	65%	$0.02	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	405	10	$63	100%	85%	$0.00	0.00	0.00
Washington	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Savings Per Building	New	562	10	$68	100%	90%	$-0.00	461	461
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	1	1
Washington	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	2	2
Wyoming	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	126	126
Wyoming	Manufactured	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	6	6
Wyoming	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.50	4	4
Wyoming	Manufactured	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.50	0.65	0.65
Wyoming	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	27	18	$1,585	2.5%	95%	$6.13	6	6
Wyoming	Manufactured	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	5	45	$396	40%	95%	$6.17	22	22
Wyoming	Manufactured	Cool Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	33	45	$1,754	70%	35%	$4.58	84	84
Wyoming	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	219	15	$1,346	100%	N/A	$0.71	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	136	15	$673	100%	N/A	$0.57	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	310	15	$2,244	100%	N/A	$0.84	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	989	15	$-1558.3421	90%	N/A	$-0.18	196	225

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	946	15	$-1143.7565	45%	N/A	$-0.14	121	139
Wyoming	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	10	20	$152	25%	95%	$1.45	0.00	0.00
Wyoming	Manufactured	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	10	18	$665	25%	75%	$6.47	21	21
Wyoming	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	11	5	$300	95%	65%	$6.27	73	73
Wyoming	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	28	30	$675	10%	90%	$2.26	24	24
Wyoming	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	18	11	$895	10%	95%	$6.67	17	17
Wyoming	Manufactured	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	8	5	$200	95%	65%	$5.46	55	55
Wyoming	Manufactured	Cool Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	28	45	$1,769	75%	25%	$5.35	50	50
Wyoming	Manufactured	Cool Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	36	45	$1,957	5.0%	50%	$4.62	8	8
Wyoming	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	41	20	$455	50%	95%	$1.12	204	204
Wyoming	Manufactured	Cool Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	71	45	$5,223	65%	25%	$6.38	97	97
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	3	45	$1,455	65%	25%	$32.73	0.00	0.00
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	12	45	$9,455	95%	75%	$65.41	71	71
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	11	45	$9,103	95%	95%	$65.99	0.00	0.00
Wyoming	Manufactured	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	14	18	$1,585	20%	95%	$11.54	2	2
Wyoming	Manufactured	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	2	45	$396	60%	95%	$12.19	1	1
Wyoming	Manufactured	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	127	15	$1,253	100%	N/A	$1.15	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	80	15	$626	100%	N/A	$0.91	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	179	15	$2,089	100%	N/A	$1.36	0.00	0.00
Wyoming	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	524	15	$-1443.9737	90%	N/A	$-0.32	23	24

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	483	15	$-1057.9803	90%	N/A	$-0.25	8	8
Wyoming	Manufactured	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	10	20	$152	25%	95%	$1.45	0.00	0.00
Wyoming	Manufactured	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	7	40	$185	75%	75%	$2.05	2	2
Wyoming	Manufactured	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	7	40	$21,856	5.0%	100%	$264.49	0.13	0.13
Wyoming	Manufactured	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	6	5	$300	95%	65%	$11.80	4	4
Wyoming	Manufactured	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	14	30	$480	25%	90%	$3.02	2	2
Wyoming	Manufactured	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.72	45	$585	20%	65%	$69.91	0.05	0.05
Wyoming	Manufactured	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	9	11	$895	5.0%	95%	$12.55	0.45	0.45
Wyoming	Manufactured	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	21	20	$455	50%	95%	$2.11	6	6
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	0.88	45	$1,455	95%	60%	$143.26	0.00	0.00
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	6	45	$9,455	95%	75%	$135.75	2	2
Wyoming	Manufactured	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	3	45	$9,103	95%	95%	$204.28	0.00	0.00
Wyoming	Manufactured	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	9	45	$396	40%	95%	$3.69	8	8
Wyoming	Manufactured	Cool Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	55	45	$1,754	70%	35%	$2.74	33	33
Wyoming	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	178	20	$1,166	50%	N/A	$0.66	88	103
Wyoming	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	46	30	$675	10%	90%	$1.35	10	10
Wyoming	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	37	9	$41	100%	N/A	$0.17	0.00	0.00
Wyoming	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	44	9	$308	100%	N/A	$1.08	1	7
Wyoming	Manufactured	Cool Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	48	45	$1,769	75%	25%	$3.20	21	21
Wyoming	Manufactured	Cool Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	61	45	$1,957	5.0%	50%	$2.77	3	3
Wyoming	Manufactured	Cool Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	119	45	$5,223	65%	25%	$3.82	44	44

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	6	45	$1,455	65%	25%	$19.59	0.00	0.00
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	21	45	$9,455	95%	75%	$39.15	32	32
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	20	45	$9,103	95%	95%	$39.50	0.00	0.00
Wyoming	Manufactured	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	5	45	$396	60%	95%	$6.47	0.51	0.51
Wyoming	Manufactured	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	29	20	$960	95%	N/A	$3.26	0.24	0.28
Wyoming	Manufactured	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	13	40	$21,856	5.0%	100%	$140.42	0.06	0.06
Wyoming	Manufactured	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	28	30	$480	25%	90%	$1.60	1	1
Wyoming	Manufactured	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	23	9	$41	100%	N/A	$0.27	0.00	0.00
Wyoming	Manufactured	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	28	9	$308	100%	N/A	$1.71	0.00	0.00
Wyoming	Manufactured	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	1	45	$585	20%	65%	$37.12	0.02	0.02
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1	45	$1,455	95%	60%	$76.06	0.00	0.00
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	11	45	$9,455	95%	75%	$72.07	1	1
Wyoming	Manufactured	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	7	45	$9,103	95%	95%	$108.45	0.00	0.00
Wyoming	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	2	2
Wyoming	Manufactured	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.46	0.46
Wyoming	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	33	33
Wyoming	Manufactured	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	2	2
Wyoming	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	0.00	0.00
Wyoming	Manufactured	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.00	0.00
Wyoming	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	208	11	$372	100%	N/A	$0.25	96	479
Wyoming	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	196	11	$343	100%	N/A	$0.24	0.00	0.00
Wyoming	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	51	11	$75	100%	N/A	$0.20	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	208	11	$372	100%	N/A	$0.25	13	55
Wyoming	Manufactured	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	196	11	$343	100%	N/A	$0.24	0.00	0.00
Wyoming	Manufactured	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	51	11	$75	100%	N/A	$0.20	0.00	0.00
Wyoming	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	42	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	116	20	$3	100%	N/A	$0.00	0.00	5
Wyoming	Manufactured	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	900	20	$129	17%	100%	$0.01	990	990
Wyoming	Manufactured	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	42	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Manufactured	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	116	20	$3	100%	N/A	$0.00	0.00	1
Wyoming	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,943	18	$1,585	2.5%	95%	$0.09	95	95
Wyoming	Manufactured	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	158	45	$396	40%	95%	$0.22	123	123
Wyoming	Manufactured	Heat Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	1,009	45	$1,754	70%	35%	$0.15	506	506
Wyoming	Manufactured	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	289	20	$121	100%	80%	$0.04	465	465
Wyoming	Manufactured	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	170	20	$56	100%	60%	$0.03	0.00	0.00
Wyoming	Manufactured	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	352	18	$665	25%	75%	$0.20	136	136
Wyoming	Manufactured	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	418	45	$652	25%	85%	$0.14	173	173
Wyoming	Manufactured	Heat Central	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,450	45	$984	25%	5%	$0.02	84	84
Wyoming	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	8,637	20	$6,962	50%	N/A	$0.08	2,938	3,313
Wyoming	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,984	20	$5,789	0.0%	N/A	$0.07	0.00	0.00
Wyoming	Manufactured	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	267	11	$257	75%	50%	$0.13	197	197
Wyoming	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	323	30	$675	10%	90%	$0.19	56	56
Wyoming	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,101	11	$895	10%	95%	$0.11	203	203
Wyoming	Manufactured	Heat Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,024	45	$1,769	75%	25%	$0.05	1,103	1,103
Wyoming	Manufactured	Heat Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,934	45	$1,957	5.0%	50%	$0.04	184	184
Wyoming	Manufactured	Heat Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,431	45	$5,223	65%	25%	$0.32	431	431

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	220	45	$1,455	65%	25%	$0.57	0.00	0.00
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	383	45	$9,455	95%	75%	$2.14	0.00	0.00
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	550	45	$9,103	95%	95%	$1.44	908	908
Wyoming	Manufactured	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,021	18	$1,585	20%	95%	$0.16	25	25
Wyoming	Manufactured	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	297	45	$396	60%	95%	$0.12	16	16
Wyoming	Manufactured	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	567	20	$121	100%	80%	$0.02	40	40
Wyoming	Manufactured	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	335	20	$56	100%	60%	$0.02	0.00	0.00
Wyoming	Manufactured	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	566	40	$185	75%	75%	$0.03	29	29
Wyoming	Manufactured	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	647	45	$652	75%	85%	$0.09	35	35
Wyoming	Manufactured	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	425	40	$21,856	5.0%	100%	$4.50	0.98	0.98
Wyoming	Manufactured	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,578	20	$5,535	50%	N/A	$0.12	208	209
Wyoming	Manufactured	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,254	20	$4,443	0.0%	N/A	$0.11	0.00	0.00
Wyoming	Manufactured	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	170	30	$480	25%	90%	$0.25	2	2
Wyoming	Manufactured	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	38	45	$585	20%	65%	$1.31	0.40	0.40
Wyoming	Manufactured	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,038	20	$665	0.0%	95%	$0.07	0.00	0.00
Wyoming	Manufactured	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	578	11	$895	5.0%	95%	$0.21	3	3
Wyoming	Manufactured	Heat Central	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	629	45	$1,129	50%	95%	$0.16	24	24
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	385	45	$1,455	95%	60%	$0.33	0.00	0.00
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	680	45	$9,455	95%	75%	$1.21	0.00	0.00
Wyoming	Manufactured	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	966	45	$9,103	95%	95%	$0.82	64	64
Wyoming	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	862	18	$1,585	2.5%	95%	$0.20	0.00	0.00
Wyoming	Manufactured	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	91	45	$396	40%	95%	$0.38	0.00	0.00
Wyoming	Manufactured	Heat Pump	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	580	45	$1,754	70%	35%	$0.26	0.00	0.00
Wyoming	Manufactured	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	130	20	$121	100%	80%	$0.09	0.00	0.00
Wyoming	Manufactured	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	76	20	$56	100%	60%	$0.07	0.00	0.00
Wyoming	Manufactured	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	250	18	$665	25%	75%	$0.28	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	139	45	$652	25%	85%	$0.41	0.00	0.00
Wyoming	Manufactured	Heat Pump	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,249	45	$984	25%	5%	$0.07	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	652	20	$1,172	100%	N/A	$0.18	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	375	20	$879	100%	N/A	$0.24	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,072	20	$1,759	100%	N/A	$0.17	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	349	20	$586	100%	N/A	$0.17	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	3,476	20	$7,472	2.5%	N/A	$0.22	0.00	0.00
Wyoming	Manufactured	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	90	11	$257	75%	50%	$0.40	0.00	0.00
Wyoming	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	140	5	$300	95%	65%	$0.51	0.00	0.00
Wyoming	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	26	30	$675	10%	90%	$2.42	0.00	0.00
Wyoming	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	588	11	$895	10%	95%	$0.21	0.00	0.00
Wyoming	Manufactured	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	107	5	$200	20%	75%	$0.44	0.00	0.00
Wyoming	Manufactured	Heat Pump	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,458	45	$1,769	75%	25%	$0.11	0.00	0.00
Wyoming	Manufactured	Heat Pump	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,897	45	$1,957	5.0%	50%	$0.09	0.00	0.00
Wyoming	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	24	20	$455	50%	95%	$1.90	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	868	45	$5,223	65%	25%	$0.52	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	110	45	$1,455	65%	25%	$1.14	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	208	45	$9,455	95%	75%	$3.95	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	283	45	$9,103	95%	95%	$2.80	0.00	0.00
Wyoming	Manufactured	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	417	18	$1,585	20%	95%	$0.40	0.00	0.00
Wyoming	Manufactured	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	133	45	$396	60%	95%	$0.26	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	209	20	$121	100%	80%	$0.06	0.00	0.00
Wyoming	Manufactured	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	123	20	$56	100%	60%	$0.05	0.00	0.00
Wyoming	Manufactured	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	330	40	$185	75%	75%	$0.05	0.00	0.00
Wyoming	Manufactured	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	199	45	$652	75%	85%	$0.28	0.00	0.00
Wyoming	Manufactured	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	212	40	$21,856	5.0%	100%	$9.12	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	324	20	$1,091	100%	N/A	$0.34	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	180	20	$818	100%	N/A	$0.46	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	543	20	$1,637	100%	N/A	$0.31	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	174	20	$545	100%	N/A	$0.32	0.00	0.00
Wyoming	Manufactured	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	1,746	20	$7,067	5.0%	N/A	$0.41	0.00	0.00
Wyoming	Manufactured	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	70	5	$300	95%	65%	$1.01	0.00	0.00
Wyoming	Manufactured	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	13	30	$480	25%	90%	$3.40	0.00	0.00
Wyoming	Manufactured	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	19	45	$585	20%	65%	$2.64	0.00	0.00
Wyoming	Manufactured	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	361	20	$665	0.0%	95%	$0.19	0.00	0.00
Wyoming	Manufactured	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	288	11	$895	5.0%	95%	$0.43	0.00	0.00
Wyoming	Manufactured	Heat Pump	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	248	45	$1,129	50%	95%	$0.40	0.00	0.00
Wyoming	Manufactured	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	13	20	$455	50%	95%	$3.52	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	157	45	$1,455	95%	60%	$0.80	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	302	45	$9,455	95%	75%	$2.72	0.00	0.00
Wyoming	Manufactured	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	405	45	$9,103	95%	95%	$1.95	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	144	45	$396	40%	95%	$0.24	28	28
Wyoming	Manufactured	Heat Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	922	45	$1,754	70%	35%	$0.17	115	115
Wyoming	Manufactured	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	264	20	$121	100%	80%	$0.05	106	106
Wyoming	Manufactured	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	156	20	$56	100%	60%	$0.04	0.00	0.00
Wyoming	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	3,160	20	$1,166	50%	N/A	$0.04	240	270
Wyoming	Manufactured	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	382	45	$652	25%	85%	$0.15	40	40
Wyoming	Manufactured	Heat Room	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	3,152	45	$984	25%	5%	$0.03	19	19
Wyoming	Manufactured	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	244	11	$257	75%	50%	$0.15	45	45
Wyoming	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	296	30	$675	10%	90%	$0.20	13	13
Wyoming	Manufactured	Heat Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,763	45	$1,769	75%	25%	$0.06	253	253
Wyoming	Manufactured	Heat Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,594	45	$1,957	5.0%	50%	$0.05	42	42
Wyoming	Manufactured	Heat Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,307	45	$5,223	65%	25%	$0.35	99	99
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	201	45	$1,455	65%	25%	$0.63	0.00	0.00
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	350	45	$9,455	95%	75%	$2.35	0.00	0.00
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	503	45	$9,103	95%	95%	$1.57	210	210
Wyoming	Manufactured	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	277	45	$396	60%	95%	$0.12	2	2
Wyoming	Manufactured	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	529	20	$121	100%	80%	$0.02	7	7
Wyoming	Manufactured	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	313	20	$56	100%	60%	$0.02	0.00	0.00
Wyoming	Manufactured	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	3,160	20	$1,000	95%	N/A	$0.03	64	65
Wyoming	Manufactured	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	604	45	$652	75%	85%	$0.09	6	6
Wyoming	Manufactured	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	397	40	$21,856	5.0%	100%	$4.82	0.18	0.18
Wyoming	Manufactured	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	158	30	$480	25%	90%	$0.27	0.56	0.56
Wyoming	Manufactured	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	35	45	$585	20%	65%	$1.41	0.07	0.07
Wyoming	Manufactured	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	969	20	$665	0.0%	95%	$0.07	0.00	0.00
Wyoming	Manufactured	Heat Room	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	587	45	$1,129	50%	95%	$0.17	4	4
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	359	45	$1,455	95%	60%	$0.35	0.00	0.00
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	634	45	$9,455	95%	75%	$1.30	0.00	0.00
Wyoming	Manufactured	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	901	45	$9,103	95%	95%	$0.88	12	12

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	95	95
Wyoming	Manufactured	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	2	2
Wyoming	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	23	7	$1	45%	N/A	$0.01	70	70
Wyoming	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	25	12	$37	55%	N/A	$0.19	875	875
Wyoming	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	23	7	$1	45%	N/A	$0.01	8	8
Wyoming	Manufactured	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	25	12	$37	55%	N/A	$0.19	84	84
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	85%	N/A	$0.02	0.00	2,060
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	27	12	$21	15%	N/A	$0.10	0.00	936
Wyoming	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.93	14	14
Wyoming	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	10%	95%	$3.25	37	37
Wyoming	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$3.25	7	7
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	85%	N/A	$0.02	0.00	109
Wyoming	Manufactured	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	27	12	$21	15%	N/A	$0.10	9	55
Wyoming	Manufactured	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.93	1	1
Wyoming	Manufactured	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	10%	95%	$3.25	3	3
Wyoming	Manufactured	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$3.25	0.67	0.68
Wyoming	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	208	208
Wyoming	Manufactured	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	28	28

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	10	10
Wyoming	Manufactured	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	3	3
Wyoming	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Manufactured	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	8	8
Wyoming	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	234	234
Wyoming	Manufactured	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	0.83	0.83
Wyoming	Manufactured	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	23	23
Wyoming	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	100	100
Wyoming	Manufactured	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.01	0.01
Wyoming	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	176	20	$633	100%	N/A	$0.36	560	607
Wyoming	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Manufactured	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,158	20	$129	3.6%	100%	$0.01	449	449
Wyoming	Manufactured	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Manufactured	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	176	20	$633	100%	N/A	$0.36	100	101
Wyoming	Manufactured	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Manufactured	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	182	182
Wyoming	Manufactured	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	17	17
Wyoming	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	169	169
Wyoming	Manufactured	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	10	10
Wyoming	Manufactured	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	254	20	$120	100%	N/A	$0.05	719	739
Wyoming	Manufactured	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	58	20	$60	100%	N/A	$0.10	0.00	0.00
Wyoming	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,759	13	$604	100%	N/A	$0.04	341	369

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	39	13	$361	100%	N/A	$1.16	0.00	0.00
Wyoming	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,759	13	$604	100%	N/A	$0.04	41	39
Wyoming	Manufactured	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	39	13	$361	100%	N/A	$1.16	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	232	14	$140	90%	85%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	83	14	$58	90%	85%	$0.08	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	405	14	$210	90%	85%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	301	14	$198	90%	95%	$0.08	0.48	7
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	152	14	$116	90%	95%	$0.09	15	18
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	474	14	$268	90%	95%	$0.07	0.94	17
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	321	14	$152	90%	76%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	172	14	$70	90%	76%	$0.05	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	54	12	$161	33%	50%	$0.39	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	33%	50%	$0.09	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	95	12	$309	33%	85%	$0.43	0.00	0.35
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	51	12	$155	33%	85%	$0.40	2	2
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	43	12	$154	33%	35%	$0.47	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	393	40	$935	29%	90%	$0.21	20	20
Wyoming	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	94	10	$5	100%	25%	$0.01	4	4
Wyoming	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	82	10	$7	66%	65%	$0.01	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	200	10	$8	66%	95%	$0.01	24	24
Wyoming	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	270	10	$50	100%	65%	$0.03	33	33
Wyoming	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	270	10	$37	100%	10%	$0.02	5	5
Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	0.19	0.19
Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	3	3
Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	0.51	0.51
Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	2	2
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	232	14	$140	90%	85%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	83	14	$58	90%	85%	$0.08	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	405	14	$210	90%	85%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	301	14	$198	90%	95%	$0.08	0.01	0.51

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	152	14	$116	90%	95%	$0.09	0.98	0.98
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	474	14	$268	90%	95%	$0.07	0.04	1
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	321	14	$152	90%	76%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	172	14	$70	90%	76%	$0.05	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	54	12	$161	33%	50%	$0.39	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	33%	50%	$0.09	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	95	12	$309	33%	85%	$0.43	0.00	0.03
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	51	12	$155	33%	85%	$0.40	0.17	0.17
Wyoming	Manufactured	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	43	12	$154	33%	35%	$0.47	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	410	40	$935	59%	90%	$0.20	0.99	0.99
Wyoming	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	82	10	$7	66%	65%	$0.01	0.00	0.00
Wyoming	Manufactured	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	200	10	$8	66%	95%	$0.01	1	1
Wyoming	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	270	10	$50	100%	65%	$0.03	2	2
Wyoming	Manufactured	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	270	10	$37	100%	10%	$0.02	0.35	0.35
Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.01	0.01

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Wyoming	Manufactured	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.03	0.03
Wyoming	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,573	13	$1,136	59%	N/A	$0.09	1,898	2,128
Wyoming	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	94	13	$72	100%	N/A	$0.10	0.00	15
Wyoming	Manufactured	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,573	13	$1,136	59%	N/A	$0.09	236	225
Wyoming	Manufactured	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	94	13	$72	100%	N/A	$0.10	0.00	1
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	232	14	$140	90%	85%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	83	14	$58	90%	85%	$0.08	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	405	14	$210	90%	85%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	301	14	$198	90%	95%	$0.08	4	88
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	152	14	$116	90%	95%	$0.09	232	251
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	474	14	$268	90%	95%	$0.07	9	206
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	321	14	$152	90%	76%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	172	14	$70	90%	76%	$0.05	0.00	0.00

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Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	54	12	$161	33%	50%	$0.39	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	33%	50%	$0.09	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	95	12	$309	33%	85%	$0.43	0.00	4
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	51	12	$155	33%	85%	$0.40	35	39
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	43	12	$154	33%	35%	$0.47	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	385	40	$935	29%	90%	$0.21	294	294
Wyoming	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	94	10	$5	100%	25%	$0.01	68	68
Wyoming	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	82	10	$7	66%	65%	$0.01	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	200	10	$8	66%	95%	$0.01	362	362
Wyoming	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	270	10	$50	100%	65%	$0.03	507	507
Wyoming	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	270	10	$37	100%	10%	$0.02	78	78
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	2	2
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	48	48
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	7	7
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	44	44
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	232	14	$140	90%	85%	$0.07	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	83	14	$58	90%	85%	$0.08	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	405	14	$210	90%	85%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	301	14	$198	90%	95%	$0.08	0.18	9
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	152	14	$116	90%	95%	$0.09	17	17
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	474	14	$268	90%	95%	$0.07	0.87	24
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	321	14	$152	90%	76%	$0.06	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	172	14	$70	90%	76%	$0.05	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	149	14	$81	90%	76%	$0.07	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	54	12	$161	33%	50%	$0.39	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	33%	50%	$0.09	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	95	12	$309	33%	85%	$0.43	0.03	0.61
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	51	12	$155	33%	85%	$0.40	3	3
Wyoming	Manufactured	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	43	12	$154	33%	35%	$0.47	0.00	0.00
Wyoming	Manufactured	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	384	40	$935	59%	90%	$0.22	16	16
Wyoming	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	82	10	$7	66%	65%	$0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Manufactured	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	200	10	$8	66%	95%	$0.01	29	29
Wyoming	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	270	10	$50	100%	65%	$0.03	41	41
Wyoming	Manufactured	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	270	10	$37	100%	10%	$0.02	6	6
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.21	0.21
Wyoming	Manufactured	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.57	0.57
Wyoming	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	142	142
Wyoming	Multifamily	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	7	7
Wyoming	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.50	10	10
Wyoming	Multifamily	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.50	1	1
Wyoming	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	50	18	$1,585	2.5%	95%	$3.31	5	5
Wyoming	Multifamily	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	4	45	$204	75%	95%	$3.80	15	15
Wyoming	Multifamily	Cool Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	29	45	$904	70%	35%	$2.63	34	34
Wyoming	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	218	15	$1,718	100%	N/A	$0.92	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	136	15	$859	100%	N/A	$0.73	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	308	15	$2,863	100%	N/A	$1.08	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	947	15	$-2015.8158	71%	N/A	$-0.25	237	258
Wyoming	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	892	15	$-1486.8618	36%	N/A	$-0.19	409	445
Wyoming	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	5	20	$80	25%	95%	$1.45	0.00	0.00
Wyoming	Multifamily	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	14	18	$686	25%	75%	$4.99	13	13

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Wyoming	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	21	5	$300	95%	65%	$3.38	62	62
Wyoming	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	52	30	$675	5.0%	90%	$1.22	10	10
Wyoming	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	34	11	$895	5.0%	95%	$3.60	7	7
Wyoming	Multifamily	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	16	5	$200	95%	65%	$2.95	47	47
Wyoming	Multifamily	Cool Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	43	45	$1,796	75%	25%	$3.57	36	36
Wyoming	Multifamily	Cool Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	54	45	$1,987	5.0%	50%	$3.17	5	5
Wyoming	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	76	20	$455	10%	95%	$0.60	34	34
Wyoming	Multifamily	Cool Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	141	45	$5,385	65%	25%	$3.32	97	97
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	7	45	$1,500	95%	60%	$17.88	0.00	0.00
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	24	45	$9,749	95%	75%	$34.17	71	71
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	22	45	$9,385	95%	95%	$35.52	0.00	0.00
Wyoming	Multifamily	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	28	18	$1,585	20%	95%	$5.87	1	1
Wyoming	Multifamily	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	3	45	$204	90%	95%	$5.89	0.50	0.50
Wyoming	Multifamily	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	135	15	$1,160	100%	N/A	$1.00	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	85	15	$580	100%	N/A	$0.79	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	190	15	$1,934	100%	N/A	$1.19	0.00	0.00
Wyoming	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	569	15	$-1329.6053	71%	N/A	$-0.27	29	29
Wyoming	Multifamily	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	532	15	$-972.204	71%	N/A	$-0.21	39	39
Wyoming	Multifamily	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	5	20	$80	25%	95%	$1.45	0.00	0.00
Wyoming	Multifamily	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	13	40	$190	75%	75%	$1.27	1	1
Wyoming	Multifamily	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	14	40	$11,599	10%	100%	$71.48	0.15	0.15

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Wyoming	Multifamily	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	11	5	$300	95%	65%	$6.01	2	2
Wyoming	Multifamily	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	29	30	$480	15%	90%	$1.54	0.68	0.68
Wyoming	Multifamily	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.80	45	$301	20%	65%	$32.55	0.01	0.01
Wyoming	Multifamily	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	19	11	$895	10%	95%	$6.39	0.52	0.52
Wyoming	Multifamily	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	43	20	$455	10%	95%	$1.07	0.77	0.77
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1	45	$1,500	95%	60%	$75.50	0.00	0.00
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	12	45	$9,749	95%	75%	$70.57	1	1
Wyoming	Multifamily	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	7	45	$9,385	95%	95%	$107.01	0.00	0.00
Wyoming	Multifamily	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	3	45	$204	75%	95%	$5.35	7	7
Wyoming	Multifamily	Cool Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	21	45	$904	70%	35%	$3.71	17	17
Wyoming	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	4	20	$1,166	50%	N/A	$25.80	0.00	0.00
Wyoming	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	36	30	$675	5.0%	90%	$1.72	5	5
Wyoming	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	29	9	$41	100%	N/A	$0.22	0.00	0.00
Wyoming	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	35	9	$308	100%	N/A	$1.37	0.94	6
Wyoming	Multifamily	Cool Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	31	45	$1,796	75%	25%	$5.02	18	18
Wyoming	Multifamily	Cool Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	38	45	$1,987	5.0%	50%	$4.47	3	3
Wyoming	Multifamily	Cool Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	100	45	$5,385	65%	25%	$4.67	52	52
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	5	45	$1,500	95%	60%	$25.19	0.00	0.00
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	17	45	$9,749	95%	75%	$48.13	38	38
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	16	45	$9,385	95%	95%	$50.03	0.00	0.00
Wyoming	Multifamily	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	3	45	$204	90%	95%	$5.40	0.39	0.39
Wyoming	Multifamily	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	103	20	$960	95%	N/A	$0.95	11	11

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	15	40	$11,599	10%	100%	$65.59	0.12	0.12
Wyoming	Multifamily	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	31	30	$480	15%	90%	$1.41	0.56	0.56
Wyoming	Multifamily	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	27	9	$41	100%	N/A	$0.24	0.00	0.00
Wyoming	Multifamily	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	31	9	$308	100%	N/A	$1.50	0.00	0.00
Wyoming	Multifamily	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.87	45	$301	20%	65%	$29.86	0.01	0.01
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1	45	$1,500	95%	60%	$69.28	0.00	0.00
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	13	45	$9,749	95%	75%	$64.75	1	1
Wyoming	Multifamily	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	8	45	$9,385	95%	95%	$98.19	0.00	0.00
Wyoming	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Multifamily	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	24	24
Wyoming	Multifamily	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	2	2
Wyoming	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	43	43
Wyoming	Multifamily	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	5	5
Wyoming	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	123	11	$372	100%	N/A	$0.42	48	240
Wyoming	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	115	11	$343	100%	N/A	$0.41	0.00	0.00
Wyoming	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	30	11	$75	100%	N/A	$0.34	0.00	0.00
Wyoming	Multifamily	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	123	11	$372	100%	N/A	$0.42	6	27
Wyoming	Multifamily	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	115	11	$343	100%	N/A	$0.41	0.00	0.00
Wyoming	Multifamily	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	30	11	$75	100%	N/A	$0.34	0.00	0.00
Wyoming	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	42	20	$6	100%	N/A	$0.02	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	116	20	$3	100%	N/A	$0.00	0.00	4
Wyoming	Multifamily	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	900	20	$129	17%	100%	$0.01	828	828
Wyoming	Multifamily	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	42	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Multifamily	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	116	20	$3	100%	N/A	$0.00	0.00	0.90
Wyoming	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,744	18	$1,585	2.5%	95%	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	41	45	$204	75%	95%	$0.43	0.00	0.00
Wyoming	Multifamily	Heat Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	277	45	$904	70%	35%	$0.28	0.00	0.00
Wyoming	Multifamily	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	657	20	$243	100%	80%	$0.04	0.00	0.00
Wyoming	Multifamily	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	388	20	$112	100%	60%	$0.03	0.00	0.00
Wyoming	Multifamily	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	205	18	$686	25%	75%	$0.36	0.00	0.00
Wyoming	Multifamily	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	177	45	$336	25%	85%	$0.17	0.00	0.00
Wyoming	Multifamily	Heat Central	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,731	45	$507	25%	5%	$0.03	0.00	0.00
Wyoming	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,943	20	$8,882	5.0%	N/A	$0.11	0.00	0.00
Wyoming	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	7,357	20	$7,386	0.0%	N/A	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	380	11	$265	75%	50%	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	290	30	$675	5.0%	90%	$0.22	0.00	0.00
Wyoming	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	988	11	$895	5.0%	95%	$0.13	0.00	0.00
Wyoming	Multifamily	Heat Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,374	45	$1,796	75%	25%	$0.05	0.00	0.00
Wyoming	Multifamily	Heat Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,383	45	$1,987	5.0%	50%	$0.04	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,686	45	$5,385	65%	25%	$0.28	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	264	45	$1,500	95%	60%	$0.49	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	462	45	$9,749	95%	75%	$1.83	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	662	45	$9,385	95%	95%	$1.23	0.00	0.00
Wyoming	Multifamily	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,014	18	$1,585	20%	95%	$0.17	0.00	0.00
Wyoming	Multifamily	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	93	45	$204	90%	95%	$0.19	0.00	0.00
Wyoming	Multifamily	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	369	45	$2,943	5.0%	95%	$0.69	0.00	0.00
Wyoming	Multifamily	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	167	45	$2,993	5.0%	95%	$1.55	0.00	0.00

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Wyoming	Multifamily	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	1,118	20	$243	100%	80%	$0.02	0.00	0.00
Wyoming	Multifamily	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	663	20	$112	100%	60%	$0.02	0.00	0.00
Wyoming	Multifamily	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	322	40	$190	75%	75%	$0.05	0.00	0.00
Wyoming	Multifamily	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	273	45	$336	75%	85%	$0.11	0.00	0.00
Wyoming	Multifamily	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	422	40	$11,599	10%	100%	$2.43	0.00	0.00
Wyoming	Multifamily	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,589	20	$5,125	5.0%	N/A	$0.11	0.00	0.00
Wyoming	Multifamily	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	4,293	20	$4,114	0.0%	N/A	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	169	30	$480	15%	90%	$0.27	0.00	0.00
Wyoming	Multifamily	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	32	45	$301	20%	65%	$0.82	0.00	0.00
Wyoming	Multifamily	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,456	20	$686	0.0%	95%	$0.05	0.00	0.00
Wyoming	Multifamily	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	574	11	$895	10%	95%	$0.22	0.00	0.00
Wyoming	Multifamily	Heat Central	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	608	45	$1,147	50%	95%	$0.16	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	393	45	$1,500	95%	60%	$0.33	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	695	45	$9,749	95%	75%	$1.22	0.00	0.00
Wyoming	Multifamily	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	985	45	$9,385	95%	95%	$0.83	0.00	0.00
Wyoming	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	739	18	$1,585	2.5%	95%	$0.23	0.00	0.00
Wyoming	Multifamily	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	25	45	$204	75%	95%	$0.71	0.00	0.00
Wyoming	Multifamily	Heat Pump	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	166	45	$904	70%	35%	$0.47	0.00	0.00
Wyoming	Multifamily	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	276	20	$243	100%	80%	$0.09	0.00	0.00
Wyoming	Multifamily	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	163	20	$112	100%	60%	$0.07	0.00	0.00
Wyoming	Multifamily	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	102	18	$686	25%	75%	$0.71	0.00	0.00
Wyoming	Multifamily	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	57	45	$336	25%	85%	$0.51	0.00	0.00
Wyoming	Multifamily	Heat Pump	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	591	45	$507	25%	5%	$0.07	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	586	20	$1,496	100%	N/A	$0.26	0.00	0.00

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Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	345	20	$1,122	100%	N/A	$0.33	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	952	20	$2,244	100%	N/A	$0.24	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	313	20	$748	100%	N/A	$0.24	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	2,928	20	$9,533	13%	N/A	$0.33	0.00	0.00
Wyoming	Multifamily	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	129	11	$265	75%	50%	$0.29	0.00	0.00
Wyoming	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	126	5	$300	95%	65%	$0.56	0.00	0.00
Wyoming	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	23	30	$675	5.0%	90%	$2.65	0.00	0.00
Wyoming	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	514	11	$895	5.0%	95%	$0.24	0.00	0.00
Wyoming	Multifamily	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	96	5	$200	20%	75%	$0.49	0.00	0.00
Wyoming	Multifamily	Heat Pump	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,535	45	$1,796	75%	25%	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Pump	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	1,999	45	$1,987	5.0%	50%	$0.09	0.00	0.00
Wyoming	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	24	20	$455	10%	95%	$1.91	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	970	45	$5,385	65%	25%	$0.48	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	126	45	$1,500	95%	60%	$1.03	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	239	45	$9,749	95%	75%	$3.54	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	324	45	$9,385	95%	95%	$2.51	0.00	0.00
Wyoming	Multifamily	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	402	18	$1,585	20%	95%	$0.42	0.00	0.00
Wyoming	Multifamily	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	42	45	$204	90%	95%	$0.42	0.00	0.00
Wyoming	Multifamily	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	141	45	$2,943	5.0%	95%	$1.81	0.00	0.00
Wyoming	Multifamily	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	58	45	$2,993	5.0%	95%	$4.41	0.00	0.00
Wyoming	Multifamily	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	400	20	$243	100%	80%	$0.06	0.00	0.00
Wyoming	Multifamily	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	238	20	$112	100%	60%	$0.05	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	160	40	$190	75%	75%	$0.10	0.00	0.00
Wyoming	Multifamily	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	79	45	$336	75%	85%	$0.37	0.00	0.00
Wyoming	Multifamily	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	207	40	$11,599	10%	100%	$4.95	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	296	20	$1,011	100%	N/A	$0.35	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	154	20	$758	100%	N/A	$0.50	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	510	20	$1,516	100%	N/A	$0.30	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	157	20	$505	100%	N/A	$0.33	0.00	0.00
Wyoming	Multifamily	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	1,659	20	$6,543	25%	N/A	$0.40	0.00	0.00
Wyoming	Multifamily	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	69	5	$300	95%	65%	$1.02	0.00	0.00
Wyoming	Multifamily	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	13	30	$480	15%	90%	$3.38	0.00	0.00
Wyoming	Multifamily	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	14	45	$301	20%	65%	$1.79	0.00	0.00
Wyoming	Multifamily	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	505	20	$686	0.0%	95%	$0.14	0.00	0.00
Wyoming	Multifamily	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	281	11	$895	10%	95%	$0.44	0.00	0.00
Wyoming	Multifamily	Heat Pump	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	234	45	$1,147	50%	95%	$0.43	0.00	0.00
Wyoming	Multifamily	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	13	20	$455	10%	95%	$3.35	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	157	45	$1,500	95%	60%	$0.83	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	302	45	$9,749	95%	75%	$2.80	0.00	0.00
Wyoming	Multifamily	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	403	45	$9,385	95%	95%	$2.02	0.00	0.00
Wyoming	Multifamily	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	39	45	$204	75%	95%	$0.45	191	191
Wyoming	Multifamily	Heat Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	264	45	$904	70%	35%	$0.30	438	438

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	626	20	$243	100%	80%	$0.04	3,372	3,372
Wyoming	Multifamily	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	370	20	$112	100%	60%	$0.03	0.00	0.00
Wyoming	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	3,259	20	$1,166	50%	N/A	$0.04	3,139	3,639
Wyoming	Multifamily	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	168	45	$336	25%	85%	$0.17	232	232
Wyoming	Multifamily	Heat Room	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	1,647	45	$507	25%	5%	$0.03	133	133
Wyoming	Multifamily	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	362	11	$265	75%	50%	$0.10	877	877
Wyoming	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	276	30	$675	5.0%	90%	$0.23	79	79
Wyoming	Multifamily	Heat Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	3,212	45	$1,796	75%	25%	$0.05	3,850	3,850
Wyoming	Multifamily	Heat Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,173	45	$1,987	5.0%	50%	$0.04	637	637
Wyoming	Multifamily	Heat Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,605	45	$5,385	65%	25%	$0.29	1,582	1,582
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	252	45	$1,500	95%	60%	$0.52	0.00	0.00
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	440	45	$9,749	95%	75%	$1.92	0.00	0.00
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	630	45	$9,385	95%	95%	$1.29	3,387	3,387
Wyoming	Multifamily	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	89	45	$204	90%	95%	$0.20	19	19
Wyoming	Multifamily	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	353	45	$2,943	5.0%	95%	$0.72	3	3
Wyoming	Multifamily	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	160	45	$2,993	5.0%	95%	$1.62	0.00	0.00
Wyoming	Multifamily	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	1,072	20	$243	100%	80%	$0.02	198	198
Wyoming	Multifamily	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	635	20	$112	100%	60%	$0.02	0.00	0.00
Wyoming	Multifamily	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	3,259	20	$1,000	95%	N/A	$0.03	869	875
Wyoming	Multifamily	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	261	45	$336	75%	85%	$0.11	36	36
Wyoming	Multifamily	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	404	40	$11,599	10%	100%	$2.53	4	4
Wyoming	Multifamily	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	161	30	$480	15%	90%	$0.28	4	4
Wyoming	Multifamily	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	30	45	$301	20%	65%	$0.85	0.85	0.85
Wyoming	Multifamily	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	1,395	20	$686	0.0%	95%	$0.05	0.00	0.00
Wyoming	Multifamily	Heat Room	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	583	45	$1,147	50%	95%	$0.17	59	59
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	377	45	$1,500	95%	60%	$0.35	0.00	0.00
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	666	45	$9,749	95%	75%	$1.27	0.00	0.00
Wyoming	Multifamily	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	943	45	$9,385	95%	95%	$0.86	165	165

Table C-2.1. Residential Measure Details

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Wyoming	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	109	109
Wyoming	Multifamily	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	3	3
Wyoming	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	23	7	$1	45%	N/A	$0.01	88	88
Wyoming	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	25	12	$37	55%	N/A	$0.19	1,102	1,102
Wyoming	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	23	7	$1	45%	N/A	$0.01	10	10
Wyoming	Multifamily	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	25	12	$37	55%	N/A	$0.19	106	106
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	85%	N/A	$0.02	0.00	2,595
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	27	12	$21	15%	N/A	$0.10	0.00	1,179
Wyoming	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.93	17	17
Wyoming	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	5.0%	95%	$3.25	23	23
Wyoming	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$3.25	9	9
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	85%	N/A	$0.02	0.00	137
Wyoming	Multifamily	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	27	12	$21	15%	N/A	$0.10	12	70
Wyoming	Multifamily	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.93	1	1
Wyoming	Multifamily	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	5.0%	95%	$3.25	2	2
Wyoming	Multifamily	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$3.25	0.85	0.86
Wyoming	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	262	262
Wyoming	Multifamily	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	36	36

Table C-2.1. Residential Measure Details

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Wyoming	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	9	9
Wyoming	Multifamily	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	3	3
Wyoming	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Multifamily	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	10	10
Wyoming	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	286	286
Wyoming	Multifamily	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	1	1
Wyoming	Multifamily	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	28	28
Wyoming	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	75	75
Wyoming	Multifamily	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	176	20	$633	100%	N/A	$0.36	693	741
Wyoming	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,158	20	$129	2.9%	100%	$0.01	443	443
Wyoming	Multifamily	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	176	20	$633	100%	N/A	$0.36	121	122
Wyoming	Multifamily	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Multifamily	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	283	283
Wyoming	Multifamily	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	27	27
Wyoming	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	187	187
Wyoming	Multifamily	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	11	11
Wyoming	Multifamily	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	261	20	$120	100%	N/A	$0.05	515	530
Wyoming	Multifamily	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	60	20	$60	100%	N/A	$0.10	0.00	0.00
Wyoming	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,038	13	$604	100%	N/A	$0.07	428	466

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	23	13	$361	100%	N/A	$1.97	0.00	0.00
Wyoming	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,038	13	$604	100%	N/A	$0.07	52	51
Wyoming	Multifamily	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	23	13	$361	100%	N/A	$1.97	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$140	52%	95%	$0.12	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	49	14	$58	52%	95%	$0.14	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	239	14	$210	52%	95%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	178	14	$198	52%	99%	$0.13	0.37	5
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	90	14	$116	52%	99%	$0.16	11	13
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	280	14	$268	52%	99%	$0.12	0.71	13
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	190	14	$152	52%	89%	$0.10	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$70	52%	89%	$0.08	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	32	12	$161	33%	50%	$0.66	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	6	12	$7	33%	50%	$0.15	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	56	12	$309	33%	85%	$0.73	0.00	0.44
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	30	12	$155	33%	85%	$0.67	2	3
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	25	12	$154	33%	35%	$0.79	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	232	40	$935	29%	90%	$0.36	25	25
Wyoming	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	55	10	$3	100%	25%	$0.01	5	5
Wyoming	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	48	10	$4	50%	65%	$0.01	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	118	10	$5	50%	95%	$0.01	22	22
Wyoming	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	159	10	$39	100%	65%	$0.04	42	42
Wyoming	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	159	10	$29	100%	10%	$0.03	6	6
Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	0.50	0.50
Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	8	8
Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	1	1
Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	7	7
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$140	52%	95%	$0.12	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	49	14	$58	52%	95%	$0.14	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	239	14	$210	52%	95%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	178	14	$198	52%	99%	$0.13	0.00	0.38

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	90	14	$116	52%	99%	$0.16	0.74	0.74
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	280	14	$268	52%	99%	$0.12	0.03	1
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	190	14	$152	52%	89%	$0.10	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$70	52%	89%	$0.08	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	32	12	$161	33%	50%	$0.66	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	6	12	$7	33%	50%	$0.15	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	56	12	$309	33%	85%	$0.73	0.00	0.04
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	30	12	$155	33%	85%	$0.67	0.21	0.21
Wyoming	Multifamily	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	25	12	$154	33%	35%	$0.79	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	242	40	$935	59%	90%	$0.34	1	1
Wyoming	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	48	10	$4	50%	65%	$0.01	0.00	0.00
Wyoming	Multifamily	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	118	10	$5	50%	95%	$0.01	1	1
Wyoming	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	159	10	$39	100%	65%	$0.04	2	2
Wyoming	Multifamily	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	159	10	$29	100%	10%	$0.03	0.44	0.44
Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.03	0.03

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Wyoming	Multifamily	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.08	0.08
Wyoming	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	928	13	$1,136	0.0%	N/A	$0.15	0.00	0.00
Wyoming	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	55	13	$72	100%	N/A	$0.16	0.00	51
Wyoming	Multifamily	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	928	13	$1,136	0.0%	N/A	$0.15	0.00	0.00
Wyoming	Multifamily	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	55	13	$72	100%	N/A	$0.16	0.00	5
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	137	14	$140	52%	95%	$0.12	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	49	14	$58	52%	95%	$0.14	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	239	14	$210	52%	95%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	178	14	$198	52%	99%	$0.13	1	73
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	90	14	$116	52%	99%	$0.16	235	236
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	280	14	$268	52%	99%	$0.12	5	163
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	190	14	$152	52%	89%	$0.10	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	101	14	$70	52%	89%	$0.08	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	32	12	$161	33%	50%	$0.66	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	6	12	$7	33%	50%	$0.15	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	56	12	$309	33%	85%	$0.73	0.05	5
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	30	12	$155	33%	85%	$0.67	58	58
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	25	12	$154	33%	35%	$0.79	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	227	40	$935	29%	90%	$0.36	488	488
Wyoming	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	55	10	$3	100%	25%	$0.01	112	112
Wyoming	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	48	10	$4	50%	65%	$0.01	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	118	10	$5	50%	95%	$0.01	455	455
Wyoming	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	159	10	$39	100%	65%	$0.04	840	840
Wyoming	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	159	10	$29	100%	10%	$0.03	129	129
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	9	9
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	165	165
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	25	25
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	149	149
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	137	14	$140	52%	95%	$0.12	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	49	14	$58	52%	95%	$0.14	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	239	14	$210	52%	95%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	178	14	$198	52%	99%	$0.13	0.20	10
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	90	14	$116	52%	99%	$0.16	19	19
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	280	14	$268	52%	99%	$0.12	0.95	27
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	190	14	$152	52%	89%	$0.10	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	101	14	$70	52%	89%	$0.08	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	88	14	$81	52%	89%	$0.11	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	32	12	$161	33%	50%	$0.66	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	6	12	$7	33%	50%	$0.15	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	56	12	$309	33%	85%	$0.73	0.06	1
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	30	12	$155	33%	85%	$0.67	5	5
Wyoming	Multifamily	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	25	12	$154	33%	35%	$0.79	0.00	0.00
Wyoming	Multifamily	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	227	40	$935	59%	90%	$0.36	30	30
Wyoming	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	48	10	$4	50%	65%	$0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Multifamily	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	118	10	$5	50%	95%	$0.01	40	40
Wyoming	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	159	10	$39	100%	65%	$0.04	74	74
Wyoming	Multifamily	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	159	10	$29	100%	10%	$0.03	11	11
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.82	0.82
Wyoming	Multifamily	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	2	2
Wyoming	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	Existing	76	5	$17	100%	N/A	$0.06	878	878
Wyoming	Single Family	Computer	Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	Per Installation	New	76	5	$17	100%	N/A	$0.06	45	45
Wyoming	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	Existing	2	20	$66	100%	N/A	$2.50	40	40
Wyoming	Single Family	Cooking Oven	Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Per Installation	New	2	20	$66	100%	N/A	$2.50	6	6
Wyoming	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	71	18	$1,585	13%	95%	$2.37	253	253
Wyoming	Single Family	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	7	45	$314	75%	95%	$3.50	164	164
Wyoming	Single Family	Cool Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	49	45	$1,390	70%	33%	$2.46	336	336
Wyoming	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	297	15	$2,136	100%	N/A	$0.84	0.00	0.00
Wyoming	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	184	15	$1,068	100%	N/A	$0.68	0.00	0.00
Wyoming	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	421	15	$3,560	100%	N/A	$0.98	0.00	0.00
Wyoming	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,324	15	$-2530.4737	70%	N/A	$-0.22	2,028	2,331
Wyoming	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	Existing	1,255	15	$-1872.8553	35%	N/A	$-0.17	3,749	4,309
Wyoming	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	Existing	8	20	$121	50%	95%	$1.45	0.04	0.04
Wyoming	Single Family	Cool Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	27	18	$1,054	25%	75%	$4.06	155	155

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Wyoming	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	Existing	29	5	$300	95%	65%	$2.42	543	543
Wyoming	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	72	30	$675	40%	90%	$0.87	731	731
Wyoming	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	48	11	$895	25%	95%	$2.57	309	309
Wyoming	Single Family	Cool Central	Tune-up - Central Air Conditioner	Central Air Conditioner with Tune-up	Central Air Conditioner with no Tune-up	Savings Per Building	Existing	22	5	$200	95%	65%	$2.11	413	413
Wyoming	Single Family	Cool Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	62	45	$2,227	75%	25%	$3.08	305	305
Wyoming	Single Family	Cool Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	79	45	$2,463	5.0%	50%	$2.70	50	50
Wyoming	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	106	20	$455	50%	95%	$0.43	1,521	1,521
Wyoming	Single Family	Cool Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	229	45	$8,279	65%	23%	$3.14	800	800
Wyoming	Single Family	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	13	45	$2,307	95%	60%	$15.35	0.00	0.00
Wyoming	Single Family	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	43	45	$14,986	95%	75%	$30.22	680	680
Wyoming	Single Family	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	40	45	$14,428	95%	95%	$30.87	0.00	0.00
Wyoming	Single Family	Cool Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	35	18	$1,585	45%	95%	$4.72	27	27
Wyoming	Single Family	Cool Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	5	45	$314	90%	95%	$5.46	5	5
Wyoming	Single Family	Cool Central	Central Air Conditioner - CEE Tier 3	CEE Tier 3 Central Air Conditioner - SEER/ EER 16/13 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	163	15	$1,532	100%	N/A	$1.09	0.00	0.00
Wyoming	Single Family	Cool Central	Central Air Conditioner - ENERGY STAR	ENERGY STAR Central Air Conditioner - SEER/ EER 14.5/12 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	102	15	$766	100%	N/A	$0.87	0.00	0.00
Wyoming	Single Family	Cool Central	Central Air Conditioner - Enhanced	Enhanced Central Air Conditioner - SEER/ EER 18/14 (Split System)	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	231	15	$2,554	100%	N/A	$1.29	0.00	0.00
Wyoming	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Direct Standard System)	Premium Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	685	15	$-1787.079	70%	N/A	$-0.30	196	201
Wyoming	Single Family	Cool Central	Central Cooling - Evaporative Cooler (Indirect/Indirect-Direct Premium System)	Standard Evaporative Cooler	Federal Standard 2006 Central Air Conditioner - SEER/ EER 13/11 (Split System)	Per Installation	New	636	15	$-1315.3092	70%	N/A	$-0.24	271	279
Wyoming	Single Family	Cool Central	Cool Roof	Lighter Colored Shingles (White)	Standard Roof Shingles	Savings Per Building	New	8	20	$121	50%	95%	$1.45	0.00	0.00
Wyoming	Single Family	Cool Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	24	40	$293	75%	75%	$1.05	18	18
Wyoming	Single Family	Cool Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	17	40	$17,480	10%	100%	$86.48	1	1

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Wyoming	Single Family	Cool Central	Quality Installation - Central Air Conditioner	Quality Installation of Central Air Conditioner - Commissioning, Controls, and Proper Sizing	Standard Installation of Central Air Conditioner	Savings Per Building	New	14	5	$300	95%	65%	$4.82	22	22
Wyoming	Single Family	Cool Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	36	30	$480	65%	90%	$1.23	25	25
Wyoming	Single Family	Cool Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.60	45	$464	20%	65%	$66.25	0.09	0.09
Wyoming	Single Family	Cool Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	24	11	$895	50%	95%	$5.13	21	21
Wyoming	Single Family	Cool Central	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	53	20	$455	50%	95%	$0.86	34	34
Wyoming	Single Family	Cool Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	3	45	$2,307	95%	60%	$57.55	0.00	0.00
Wyoming	Single Family	Cool Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	20	45	$14,986	95%	75%	$64.62	14	14
Wyoming	Single Family	Cool Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	13	45	$14,428	95%	95%	$91.24	0.00	0.00
Wyoming	Single Family	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	4	45	$314	75%	95%	$6.28	30	30
Wyoming	Single Family	Cool Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	27	45	$1,390	70%	33%	$4.41	61	61
Wyoming	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	85	20	$1,166	50%	N/A	$1.39	102	127
Wyoming	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	40	30	$675	40%	90%	$1.56	139	139
Wyoming	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	32	9	$41	100%	N/A	$0.20	0.00	0.00
Wyoming	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	Existing	38	9	$308	100%	N/A	$1.25	3	24
Wyoming	Single Family	Cool Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	35	45	$2,227	75%	25%	$5.53	60	60
Wyoming	Single Family	Cool Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	44	45	$2,463	5.0%	50%	$4.85	10	10
Wyoming	Single Family	Cool Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	127	45	$8,279	65%	23%	$5.64	173	173
Wyoming	Single Family	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	7	45	$2,307	95%	60%	$27.53	0.00	0.00
Wyoming	Single Family	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	24	45	$14,986	95%	75%	$54.19	147	147
Wyoming	Single Family	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	22	45	$14,428	95%	95%	$55.36	0.00	0.00
Wyoming	Single Family	Cool Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	4	45	$314	90%	95%	$6.78	1	1
Wyoming	Single Family	Cool Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	65	20	$960	95%	N/A	$1.50	17	17

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Cool Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	14	40	$17,480	10%	100%	$107.38	0.42	0.42
Wyoming	Single Family	Cool Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	29	30	$480	65%	90%	$1.53	8	8
Wyoming	Single Family	Cool Room	Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	24	9	$41	100%	N/A	$0.26	0.00	0.00
Wyoming	Single Family	Cool Room	Room AC - Federal Standard 2015	Federal Standard 2015 Room AC - CEER/EER 10.9/11 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Per Installation	New	29	9	$308	100%	N/A	$1.64	0.00	0.00
Wyoming	Single Family	Cool Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	0.49	45	$464	20%	65%	$82.26	0.03	0.03
Wyoming	Single Family	Cool Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	2	45	$2,307	95%	60%	$71.46	0.00	0.00
Wyoming	Single Family	Cool Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	16	45	$14,986	95%	75%	$80.23	5	5
Wyoming	Single Family	Cool Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	11	45	$14,428	95%	95%	$113.29	0.00	0.00
Wyoming	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	Existing	125	6	$0.00	100%	N/A	$0.00	20	20
Wyoming	Single Family	Copier	Office Copier - ENERGY STAR	ENERGY STAR Office Copier	Standard Office Copier	Per Installation	New	125	6	$0.00	100%	N/A	$0.00	4	4
Wyoming	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	Existing	18	3	$8	100%	N/A	$0.16	166	166
Wyoming	Single Family	DVD	DVD Player - ENERGY STAR	ENERGY STAR DVD Player	Standard DVD Player	Per Installation	New	18	3	$8	100%	N/A	$0.16	14	14
Wyoming	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	Existing	77	12	$44	100%	N/A	$0.08	2	2
Wyoming	Single Family	Dehumidifier	Dehumidifier - High Efficiency	High Efficiency Dehumidifier	Federal Standard 2013 Dehumidifier	Per Installation	New	77	12	$44	100%	N/A	$0.08	0.33	0.33
Wyoming	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	196	11	$372	100%	N/A	$0.26	457	2,266
Wyoming	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	185	11	$343	100%	N/A	$0.26	0.00	0.00
Wyoming	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	Existing	48	11	$75	100%	N/A	$0.22	0.00	0.00
Wyoming	Single Family	Dryer	Dryer - Enhanced Efficiency	Enhanced Efficiency Steam Dryer with Controls - CEF/EF 3.79/3.9	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	196	11	$372	100%	N/A	$0.26	64	260
Wyoming	Single Family	Dryer	Dryer - Federal Standard 2015	Federal Standard 2015 Dryer - CEF/EF 3.73/3.83	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	185	11	$343	100%	N/A	$0.26	0.00	0.00
Wyoming	Single Family	Dryer	Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Per Installation	New	48	11	$75	100%	N/A	$0.22	0.00	0.00
Wyoming	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	42	20	$6	100%	N/A	$0.02	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	Existing	116	20	$3	100%	N/A	$0.00	0.00	37
Wyoming	Single Family	Freezer	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Existing Non-Efficient Freezer	Per Unit	Existing	900	20	$129	17%	100%	$0.01	6,468	6,468
Wyoming	Single Family	Freezer	Freezer - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Installation	New	42	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Single Family	Freezer	Freezer - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Installation	New	116	20	$3	100%	N/A	$0.00	0.00	7
Wyoming	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	2,557	18	$1,585	13%	95%	$0.06	739	739
Wyoming	Single Family	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	67	45	$314	75%	95%	$0.40	115	115
Wyoming	Single Family	Heat Central	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	451	45	$1,390	70%	33%	$0.27	251	251
Wyoming	Single Family	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	347	20	$121	100%	80%	$0.04	661	661
Wyoming	Single Family	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	205	20	$56	100%	60%	$0.03	0.00	0.00
Wyoming	Single Family	Heat Central	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	380	18	$1,054	25%	75%	$0.29	173	173
Wyoming	Single Family	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	258	45	$516	25%	85%	$0.17	126	126
Wyoming	Single Family	Heat Central	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,438	45	$780	25%	45%	$0.03	633	633
Wyoming	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	11,619	20	$11,043	50%	N/A	$0.10	4,386	5,164
Wyoming	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	Existing	10,800	20	$9,183	0.0%	N/A	$0.09	0.00	0.00
Wyoming	Single Family	Heat Central	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	602	11	$408	75%	50%	$0.09	523	523
Wyoming	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	426	30	$675	40%	90%	$0.13	350	350
Wyoming	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	1,449	11	$895	25%	95%	$0.08	780	780
Wyoming	Single Family	Heat Central	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,471	45	$2,227	75%	25%	$0.04	1,879	1,879
Wyoming	Single Family	Heat Central	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	5,808	45	$2,463	5.0%	50%	$0.04	312	312
Wyoming	Single Family	Heat Central	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,735	45	$8,279	65%	23%	$0.26	874	874
Wyoming	Single Family	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	436	45	$2,307	95%	60%	$0.46	0.00	0.00
Wyoming	Single Family	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	760	45	$14,986	95%	75%	$1.71	0.00	0.00
Wyoming	Single Family	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	1,090	45	$14,428	95%	95%	$1.15	2,053	2,053
Wyoming	Single Family	Heat Central	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	1,432	18	$1,585	45%	95%	$0.12	93	93
Wyoming	Single Family	Heat Central	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	146	45	$314	90%	95%	$0.19	14	14
Wyoming	Single Family	Heat Central	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	474	45	$4,524	25%	95%	$0.83	12	12
Wyoming	Single Family	Heat Central	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	340	45	$4,602	25%	95%	$1.18	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Heat Central	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	576	20	$121	100%	80%	$0.02	47	47
Wyoming	Single Family	Heat Central	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	341	20	$56	100%	60%	$0.02	0.00	0.00
Wyoming	Single Family	Heat Central	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	611	40	$293	75%	75%	$0.04	38	38
Wyoming	Single Family	Heat Central	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	375	45	$516	75%	85%	$0.12	23	23
Wyoming	Single Family	Heat Central	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	596	40	$17,480	10%	100%	$2.54	3	3
Wyoming	Single Family	Heat Central	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	6,492	20	$6,765	50%	N/A	$0.11	289	293
Wyoming	Single Family	Heat Central	Heat Pump - Air Source Federal Standard 2006	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Standard Electric Furnace - HSPF 1.0	Per Installation	New	6,070	20	$5,430	0.0%	N/A	$0.09	0.00	0.00
Wyoming	Single Family	Heat Central	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	238	30	$480	65%	90%	$0.17	13	13
Wyoming	Single Family	Heat Central	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	35	45	$464	20%	65%	$1.13	0.45	0.45
Wyoming	Single Family	Heat Central	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,172	20	$1,054	85%	95%	$0.05	162	162
Wyoming	Single Family	Heat Central	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	811	11	$895	50%	95%	$0.15	51	51
Wyoming	Single Family	Heat Central	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	783	45	$1,422	50%	95%	$0.16	30	30
Wyoming	Single Family	Heat Central	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	620	45	$2,307	95%	60%	$0.32	0.00	0.00
Wyoming	Single Family	Heat Central	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1,094	45	$14,986	95%	75%	$1.19	0.00	0.00
Wyoming	Single Family	Heat Central	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1,553	45	$14,428	95%	95%	$0.81	103	103
Wyoming	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	Existing	1,082	18	$1,585	13%	95%	$0.16	220	220
Wyoming	Single Family	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	40	45	$314	75%	95%	$0.68	48	48
Wyoming	Single Family	Heat Pump	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	265	45	$1,390	70%	33%	$0.46	104	104
Wyoming	Single Family	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	145	20	$121	100%	80%	$0.08	195	195
Wyoming	Single Family	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	85	20	$56	100%	60%	$0.07	0.00	0.00
Wyoming	Single Family	Heat Pump	Duct Sealing and Insulation - Code	Code Duct Sealing and Insulation - R-8	Existing Duct Sealing and Insulation - R-4	Savings Per Building	Existing	189	18	$1,054	25%	75%	$0.59	60	60
Wyoming	Single Family	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	78	45	$516	25%	85%	$0.58	27	27
Wyoming	Single Family	Heat Pump	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	783	45	$780	25%	45%	$0.09	146	146
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	819	20	$1,860	100%	N/A	$0.23	0.00	0.00

Table C-2.1. Residential Measure Details

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Wyoming	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	464	20	$1,395	100%	N/A	$0.31	0.00	0.00
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	1,357	20	$2,790	100%	N/A	$0.21	339	414
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	441	20	$930	100%	N/A	$0.21	0.00	0.00
Wyoming	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	Existing	4,356	20	$11,852	20%	N/A	$0.28	367	440
Wyoming	Single Family	Heat Pump	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	218	11	$408	75%	50%	$0.26	134	134
Wyoming	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	Existing	180	5	$300	95%	65%	$0.39	190	190
Wyoming	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	33	30	$675	40%	90%	$1.87	19	19
Wyoming	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	Existing	745	11	$895	25%	95%	$0.17	285	285
Wyoming	Single Family	Heat Pump	Tune-up - Heat Pump	Heat Pump with Tune-up	Heat Pump with no Tune-up	Savings Per Building	Existing	137	5	$200	20%	75%	$0.34	35	35
Wyoming	Single Family	Heat Pump	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,024	45	$2,227	75%	25%	$0.10	600	600
Wyoming	Single Family	Heat Pump	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	2,636	45	$2,463	5.0%	50%	$0.08	100	100
Wyoming	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	Existing	32	20	$455	50%	95%	$1.41	26	26
Wyoming	Single Family	Heat Pump	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	1,566	45	$8,279	65%	23%	$0.46	356	356
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	209	45	$2,307	95%	60%	$0.96	0.00	0.00
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	393	45	$14,986	95%	75%	$3.31	0.00	0.00
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	534	45	$14,428	95%	95%	$2.35	715	715
Wyoming	Single Family	Heat Pump	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	No Air to Air Heat Exchanger	Savings Per Building	New	580	18	$1,585	45%	95%	$0.29	26	26
Wyoming	Single Family	Heat Pump	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	69	45	$314	90%	95%	$0.40	4	4
Wyoming	Single Family	Heat Pump	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	187	45	$4,524	25%	95%	$2.09	3	3
Wyoming	Single Family	Heat Pump	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	137	45	$4,602	25%	95%	$2.91	0.00	0.00
Wyoming	Single Family	Heat Pump	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	213	20	$121	100%	80%	$0.06	12	12
Wyoming	Single Family	Heat Pump	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	126	20	$56	100%	60%	$0.05	0.00	0.00

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Wyoming	Single Family	Heat Pump	Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Savings Per Building	New	302	40	$293	75%	75%	$0.09	13	13
Wyoming	Single Family	Heat Pump	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	106	45	$516	75%	85%	$0.42	5	5
Wyoming	Single Family	Heat Pump	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	292	40	$17,480	10%	100%	$5.29	1	1
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source CEE Tier 2	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	421	20	$1,334	100%	N/A	$0.32	0.00	0.00
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source ENERGY STAR	ENERGY STAR Air Source Heat Pump - SEER/EER 14.5/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	221	20	$1,000	100%	N/A	$0.46	0.00	0.00
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	723	20	$2,001	100%	N/A	$0.28	21	22
Wyoming	Single Family	Heat Pump	Heat Pump - Air Source Federal Standard 2015	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	227	20	$667	100%	N/A	$0.30	0.00	0.00
Wyoming	Single Family	Heat Pump	Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Per Installation	New	2,437	20	$8,637	40%	N/A	$0.36	64	64
Wyoming	Single Family	Heat Pump	Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Savings Per Building	New	95	5	$300	95%	65%	$0.75	8	8
Wyoming	Single Family	Heat Pump	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	17	30	$480	65%	90%	$2.52	0.71	0.71
Wyoming	Single Family	Heat Pump	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	15	45	$464	20%	65%	$2.55	0.14	0.14
Wyoming	Single Family	Heat Pump	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	780	20	$1,054	85%	95%	$0.14	43	43
Wyoming	Single Family	Heat Pump	Thermostat - Multi-Zone	Individual Room Temperature Control for Major Occupied Rooms	Programmable Thermostat - Central Control Only	Savings Per Building	New	397	11	$895	50%	95%	$0.31	19	19
Wyoming	Single Family	Heat Pump	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	310	45	$1,422	50%	95%	$0.40	9	9
Wyoming	Single Family	Heat Pump	Whole-House Fan	Whole-House Fan	No Whole-House Fan	Savings Per Building	New	16	20	$455	50%	95%	$2.73	0.64	0.64
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	255	45	$2,307	95%	60%	$0.79	0.00	0.00
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	489	45	$14,986	95%	75%	$2.66	0.00	0.00
Wyoming	Single Family	Heat Pump	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	654	45	$14,428	95%	95%	$1.92	33	33
Wyoming	Single Family	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	Existing	63	45	$314	75%	95%	$0.43	244	244
Wyoming	Single Family	Heat Room	Ceiling Insulation (WY) - Code	R-49 (WY Code)	R-14 (Existing Insulation)	Savings Per Building	Existing	420	45	$1,390	70%	33%	$0.29	529	529

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	324	20	$121	100%	80%	$0.04	1,395	1,395
Wyoming	Single Family	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	Existing	191	20	$56	100%	60%	$0.03	0.00	0.00
Wyoming	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	Existing	5,009	20	$1,166	50%	N/A	$0.02	3,909	4,512
Wyoming	Single Family	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	Existing	240	45	$516	25%	85%	$0.19	272	272
Wyoming	Single Family	Heat Room	Floor Insulation (WY) - Code	R-21 (WY Code)	R-0 (Existing Insulation)	Savings Per Building	Existing	2,273	45	$780	25%	45%	$0.03	1,358	1,358
Wyoming	Single Family	Heat Room	Infiltration Control	Infiltration Control - 0.1 ACH Reduction	Existing Infiltration Conditions	Savings Per Building	Existing	562	11	$408	75%	50%	$0.10	1,102	1,102
Wyoming	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	Existing	397	30	$675	40%	90%	$0.14	740	740
Wyoming	Single Family	Heat Room	Wall Insulation 2x4 (WY) - Below Code	R-13 (Below WY Code - Maximum Insulation Feasible)	R-1 (Existing Insulation)	Savings Per Building	Existing	4,168	45	$2,227	75%	25%	$0.05	4,016	4,016
Wyoming	Single Family	Heat Room	Wall Insulation 2x6 (WY) - Code	R-19 (WY Code)	R-1 (Existing Insulation)	Savings Per Building	Existing	5,414	45	$2,463	5.0%	50%	$0.04	668	668
Wyoming	Single Family	Heat Room	Window (WY) - Code	U-value 0.35 Window (WY Code)	Existing Window - Single Pane	Savings Per Building	Existing	2,550	45	$8,279	65%	23%	$0.28	1,878	1,878
Wyoming	Single Family	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	407	45	$2,307	95%	60%	$0.49	0.00	0.00
Wyoming	Single Family	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	709	45	$14,986	95%	75%	$1.84	0.00	0.00
Wyoming	Single Family	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	Existing	1,016	45	$14,428	95%	95%	$1.23	4,412	4,412
Wyoming	Single Family	Heat Room	Ceiling Insulation (WY) - Above Code	R-60 (Above WY Code)	R-49 (WY Code)	Savings Per Building	New	138	45	$314	90%	95%	$0.20	22	22
Wyoming	Single Family	Heat Room	Construction - ICF	Concrete Framing	Standard Wood Framing	Savings Per Building	New	448	45	$4,524	25%	95%	$0.88	18	18
Wyoming	Single Family	Heat Room	Construction - SIP	Specialty Framing	Standard Wood Framing	Savings Per Building	New	321	45	$4,602	25%	95%	$1.24	0.00	0.00
Wyoming	Single Family	Heat Room	Door (WY) - Above Code	R-10 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	545	20	$121	100%	80%	$0.02	75	75
Wyoming	Single Family	Heat Room	Door (WY) - Above Code	R-5 Door (Above WY Code)	R-2.9 Door (WY Code)	Savings Per Building	New	322	20	$56	100%	60%	$0.02	0.00	0.00
Wyoming	Single Family	Heat Room	Ductless Heat Pump (DHP)	Ductless Heat Pump (Heat) - SEER/EER 18/12.5, HSPF 10.0	Standard Baseboard Heating - HSPF 1.0	Per Installation	New	5,009	20	$1,000	95%	N/A	$0.02	957	967
Wyoming	Single Family	Heat Room	Floor Insulation (WY) - Above Code	R-38 (Above WY Code)	R-21 (WY Code)	Savings Per Building	New	355	45	$516	75%	85%	$0.13	39	39
Wyoming	Single Family	Heat Room	Green Roof	Ecoroof	Standard Roof	Savings Per Building	New	564	40	$17,480	10%	100%	$2.68	5	5
Wyoming	Single Family	Heat Room	Radiant Barrier (Ceiling)	Install Radiant Barrier	No Radiant Barrier	Savings Per Building	New	225	30	$480	65%	90%	$0.18	21	21
Wyoming	Single Family	Heat Room	Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Savings Per Building	New	33	45	$464	20%	65%	$1.19	0.73	0.73
Wyoming	Single Family	Heat Room	Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Savings Per Building	New	2,053	20	$1,054	85%	95%	$0.05	265	265
Wyoming	Single Family	Heat Room	Wall Insulation 2x6 (WY) - Above Code	R-21 + R-5 Sheathing (Above WY Code)	R-19 (WY Code)	Savings Per Building	New	740	45	$1,422	50%	95%	$0.17	50	50
Wyoming	Single Family	Heat Room	Window (WY) - Tier 1 Above Code	U-value 0.30 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	586	45	$2,307	95%	60%	$0.34	0.00	0.00
Wyoming	Single Family	Heat Room	Window (WY) - Tier 2 Above Code	U-value 0.25 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1,034	45	$14,986	95%	75%	$1.26	0.00	0.00
Wyoming	Single Family	Heat Room	Window (WY) - Tier 3 Above Code	U-value 0.22 Window (Above WY Code)	U-value 0.35 Window (WY Code)	Savings Per Building	New	1,467	45	$14,428	95%	95%	$0.85	175	175

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	Existing	22	7	$106	100%	N/A	$0.90	460	460
Wyoming	Single Family	Home Audio System	Home Audio System - ENERGY STAR	ENERGY STAR Homes Audio System	Standard Homes Audio System	Per Installation	New	22	7	$106	100%	N/A	$0.90	14	14
Wyoming	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	Existing	23	7	$1	45%	N/A	$0.01	543	543
Wyoming	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	Existing	25	12	$37	55%	N/A	$0.19	6,746	6,746
Wyoming	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Per Installation	New	23	7	$1	45%	N/A	$0.01	64	64
Wyoming	Single Family	Lighting Interior Specialty	Lighting Specialty Lamp - Premium Efficiency LED	Premium Efficiency Specialty Lamp -LED	Standard Specialty Lamp - Incandescent	Per Installation	New	25	12	$37	55%	N/A	$0.19	654	654
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	24	5	$1	85%	N/A	$0.02	0.00	15,880
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	Existing	27	12	$21	15%	N/A	$0.10	0.00	7,215
Wyoming	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	Existing	4	10	$60	2.5%	95%	$1.93	108	108
Wyoming	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	Existing	3	10	$68	10%	95%	$3.25	289	289
Wyoming	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	Existing	3	10	$68	2.3%	85%	$3.25	57	57
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2014	EISA Standard 2014 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	7	2	$0.91	100%	N/A	$0.07	0.00	0.00
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - EISA Standard 2020	EISA Standard 2020 General Service Lamp - Incandescent	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp -CFL	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	24	5	$1	85%	N/A	$0.02	0.00	840
Wyoming	Single Family	Lighting Standard	Lighting General Service Lamp - Premium Efficiency LED	Premium Efficiency General Service Lamp -LED	Lighting General Service Lamp - EISA Standard 2013	Per Installation	New	27	12	$21	15%	N/A	$0.10	74	428
Wyoming	Single Family	Lighting Standard	Occupancy Sensor - Interior Lighting	Install Wall-Switch Occupancy Sensor on Interior Lighting	Manual Control on Interior Lighting	Savings Per Building	New	4	10	$60	2.5%	95%	$1.93	9	9
Wyoming	Single Family	Lighting Standard	Photocell Daylighting Control - Interior/ Exterior Lighting	Install Photocell on Interior/Exterior Lighting	Manual Control on Interior/Exterior Lighting	Savings Per Building	New	3	10	$68	10%	95%	$3.25	26	26
Wyoming	Single Family	Lighting Standard	Time Clock - Exterior Lighting	Time Clock on Exterior Lighting	Manual Control on Exterior Lighting	Savings Per Building	New	3	10	$68	2.3%	85%	$3.25	5	5
Wyoming	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	Existing	26	15	$6	100%	N/A	$0.03	1,027	1,027
Wyoming	Single Family	Microwave	Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Per Installation	New	26	15	$6	100%	N/A	$0.03	141	141

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Wyoming	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	Existing	14	8	$0.00	100%	N/A	$0.00	61	61
Wyoming	Single Family	Monitor	Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Per Installation	New	14	8	$0.00	100%	N/A	$0.00	23	23
Wyoming	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	Existing	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Single Family	Multifunctio n Device	Office Multifunction Device - ENERGY STAR	ENERGY STAR Multifunction Device "All-In-One" Imaging Equipment	Standard Multifunction Device "All-In-One" Imaging Equipment	Per Installation	New	149	6	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	Existing	12	3	$4	25%	20%	$0.15	40	40
Wyoming	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	Existing	100	4	$22	20%	85%	$0.06	1,139	1,139
Wyoming	Single Family	Plug Load Other	Battery Charger - ENERGY STAR	ENERGY STAR Battery Charger	Standard Battery Charger	Savings Per Building	New	12	3	$4	25%	20%	$0.15	4	4
Wyoming	Single Family	Plug Load Other	Smart Strip	Smart Strip	Standard Power Strip	Savings Per Building	New	100	4	$22	20%	85%	$0.06	112	112
Wyoming	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	Existing	440	10	$175	40%	N/A	$0.06	11	11
Wyoming	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	Existing	1,170	10	$750	75%	N/A	$0.09	105	105
Wyoming	Single Family	Pool Pump	Pool Pump - 2 Speed	2 Speed Pool Pump	Standard 1 Speed Pool Pump	Per Installation	New	440	10	$175	40%	N/A	$0.06	1	1
Wyoming	Single Family	Pool Pump	Pool Pump - VSD	Pool Pump with Variable Speed Drive (VSD)	Standard 1 Speed Pool Pump	Per Installation	New	1,170	10	$750	75%	N/A	$0.09	11	11
Wyoming	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	Existing	91	5	$0.00	100%	N/A	$0.00	540	540
Wyoming	Single Family	Printer	Office Printer - ENERGY STAR	ENERGY STAR Office Printer	Standard Office Printer	Per Installation	New	91	5	$0.00	100%	N/A	$0.00	0.05	0.05
Wyoming	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	176	20	$633	100%	N/A	$0.36	2,445	2,953
Wyoming	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	Existing	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Single Family	Refrigerator	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Existing Non-Efficient Refrigerator	Per Unit	Existing	1,158	20	$129	7.7%	100%	$0.01	5,143	5,143
Wyoming	Single Family	Refrigerator	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	157	20	$472	100%	N/A	$0.31	0.00	0.00
Wyoming	Single Family	Refrigerator	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	176	20	$633	100%	N/A	$0.36	521	525
Wyoming	Single Family	Refrigerator	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	138	20	$37	100%	N/A	$0.03	0.00	0.00
Wyoming	Single Family	Refrigerator	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Installation	New	43	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	Existing	201	5	$6	100%	N/A	$0.01	1,457	1,457
Wyoming	Single Family	Set Top Box	Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Per Installation	New	201	5	$6	100%	N/A	$0.01	139	139
Wyoming	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	Existing	130	5	$409	100%	N/A	$0.74	942	942
Wyoming	Single Family	TV	TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Per Installation	New	130	5	$409	100%	N/A	$0.74	56	56

Table C-2.1. Residential Measure Details

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Wyoming	Single Family	Ventilation And Circulation	Motor - ECM	Electronically Commutated Motor (ECM)	Standard Motor	Per Installation	Existing	402	20	$120	100%	N/A	$0.03	4,406	4,529
Wyoming	Single Family	Ventilation And Circulation	Motor - Federal Standard 2016	Federal Standard 2016 Motor	Standard Motor	Per Installation	Existing	93	20	$60	100%	N/A	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	1,659	13	$604	100%	N/A	$0.05	1,160	1,265
Wyoming	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	Existing	36	13	$361	100%	N/A	$1.23	0.00	0.00
Wyoming	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater > 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	1,659	13	$604	100%	N/A	$0.05	139	132
Wyoming	Single Family	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater > 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Per Installation	New	36	13	$361	100%	N/A	$1.23	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	219	14	$140	97%	61%	$0.08	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	78	14	$58	97%	61%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	382	14	$210	97%	61%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	284	14	$198	97%	95%	$0.08	1	27
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	143	14	$116	97%	95%	$0.10	58	68
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	447	14	$268	97%	95%	$0.07	3	66
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$81	97%	84%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	303	14	$152	97%	84%	$0.06	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	162	14	$70	97%	88%	$0.05	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$81	97%	88%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$161	68%	30%	$0.41	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	68%	30%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	90	12	$309	68%	85%	$0.45	0.00	2
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	48	12	$155	68%	85%	$0.42	16	21
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	41	12	$154	68%	35%	$0.49	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	361	40	$935	29%	90%	$0.23	68	68
Wyoming	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	88	10	$5	100%	25%	$0.01	16	16
Wyoming	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	77	10	$7	75%	65%	$0.01	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	188	10	$8	75%	95%	$0.01	96	96
Wyoming	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	254	10	$59	100%	65%	$0.03	119	119
Wyoming	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	254	10	$44	100%	10%	$0.03	18	18
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	0.67	0.67
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	11	11
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	1	1
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	10	10
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	219	14	$140	97%	61%	$0.08	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	78	14	$58	97%	61%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	382	14	$210	97%	61%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	284	14	$198	97%	95%	$0.08	0.03	1
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	143	14	$116	97%	95%	$0.10	3	3
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	447	14	$268	97%	95%	$0.07	0.18	5
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$81	97%	84%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	303	14	$152	97%	84%	$0.06	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	162	14	$70	97%	88%	$0.05	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$81	97%	88%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$161	68%	30%	$0.41	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	68%	30%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	90	12	$309	68%	85%	$0.45	0.01	0.24
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	48	12	$155	68%	85%	$0.42	1	1
Wyoming	Single Family	Water Heat Gt 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	41	12	$154	68%	35%	$0.49	0.00	0.00
Wyoming	Single Family	Water Heat Gt 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	387	40	$935	59%	90%	$0.21	3	3
Wyoming	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	77	10	$7	75%	65%	$0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Gt 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	188	10	$8	75%	95%	$0.01	6	6
Wyoming	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	254	10	$59	100%	65%	$0.03	7	7
Wyoming	Single Family	Water Heat Gt 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	254	10	$44	100%	10%	$0.03	1	1
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.04	0.04
Wyoming	Single Family	Water Heat Gt 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	0.11	0.11
Wyoming	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	1,483	13	$1,136	59%	N/A	$0.10	6,420	7,262
Wyoming	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	Existing	89	13	$72	100%	N/A	$0.10	0.00	51
Wyoming	Single Family	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater = 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	1,483	13	$1,136	59%	N/A	$0.10	802	759
Wyoming	Single Family	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater = 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater = 55 GAL - EF 0.92	Per Installation	New	89	13	$72	100%	N/A	$0.10	0.00	5
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	219	14	$140	97%	61%	$0.08	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	78	14	$58	97%	61%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	382	14	$210	97%	61%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	284	14	$198	97%	95%	$0.08	15	335
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	Existing	143	14	$116	97%	95%	$0.10	883	954
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	447	14	$268	97%	95%	$0.07	36	784
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$81	97%	84%	$0.07	0.00	0.00

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	303	14	$152	97%	84%	$0.06	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	Existing	162	14	$70	97%	88%	$0.05	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	Existing	140	14	$81	97%	88%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	51	12	$161	68%	30%	$0.41	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	10	12	$7	68%	30%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	90	12	$309	68%	85%	$0.45	0.00	29
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	Existing	48	12	$155	68%	85%	$0.42	252	281
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	Existing	41	12	$154	68%	35%	$0.49	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	Existing	354	40	$935	29%	90%	$0.23	1,015	1,015
Wyoming	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Federal Standard 1994	Federal Standard 1994 Aerator - 2.2 GPM	Existing Faucet Aerator - 3.0 GPM	Savings Per Building	Existing	88	10	$5	100%	25%	$0.01	240	240
Wyoming	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	77	10	$7	75%	65%	$0.01	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	Existing	188	10	$8	75%	95%	$0.01	1,453	1,453
Wyoming	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	Existing	254	10	$59	100%	65%	$0.03	1,788	1,788
Wyoming	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	Existing	254	10	$44	100%	10%	$0.03	275	275
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	Existing	2	15	$11	95%	95%	$0.67	9	9
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Code	R-5.6 Pipe Wrap (ID/UT/WY Code)	No Pipe Insulation	Savings Per Building	Existing	42	15	$12	95%	75%	$0.03	164	164
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	Existing	5	15	$12	95%	95%	$0.28	25	25

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Code	R-3.6 Pipe Wrap (WA/CA Code)	No Pipe Insulation	Savings Per Building	Existing	39	15	$11	95%	75%	$0.03	149	149
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	219	14	$140	97%	61%	$0.08	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	78	14	$58	97%	61%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 2	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	382	14	$210	97%	61%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	284	14	$198	97%	95%	$0.08	0.69	33
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Savings Per Building	New	143	14	$116	97%	95%	$0.10	64	64
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - CEE Tier 3	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	447	14	$268	97%	95%	$0.07	3	91
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$81	97%	84%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - ENERGY STAR	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	303	14	$152	97%	84%	$0.06	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2016	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Savings Per Building	New	162	14	$70	97%	88%	$0.05	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Clothes Washer - Federal Standard 2018	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Savings Per Building	New	140	14	$81	97%	88%	$0.07	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	51	12	$161	68%	30%	$0.41	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - ENERGY STAR	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	10	12	$7	68%	30%	$0.09	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	90	12	$309	68%	85%	$0.45	0.23	4
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Enhanced Efficiency	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Savings Per Building	New	48	12	$155	68%	85%	$0.42	21	21

Table C-2.1. Residential Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Single Family	Water Heat Le 55 Gal	Dishwasher - Federal Standard 2014	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Savings Per Building	New	41	12	$154	68%	35%	$0.49	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Savings Per Building	New	362	40	$935	59%	90%	$0.23	57	57
Wyoming	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 1	Tier 1 Aerator - 1.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	77	10	$7	75%	65%	$0.01	0.00	0.00
Wyoming	Single Family	Water Heat Le 55 Gal	Faucet Aerator - Tier 2	Tier 2 Aerator - 0.5 GPM	Federal Standard 1994 Aerator - 2.2 GPM	Savings Per Building	New	188	10	$8	75%	95%	$0.01	115	115
Wyoming	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead	Low-Flow Showerhead - 2.0 GPM	Federal Standard 1994 Showerhead - 2.5 GPM	Savings Per Building	New	254	10	$59	100%	65%	$0.03	141	141
Wyoming	Single Family	Water Heat Le 55 Gal	Low-Flow Showerhead - Federal Standard 1994	Federal Standard 1994 Showerhead - 2.5 GPM	Existing Faucet Showerhead - 3.0 GPM	Savings Per Building	New	254	10	$44	100%	10%	$0.03	21	21
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (ID/UT/WY) - Above Code	R-8 Pipe Wrap (Above ID/UT/WY Code)	R-5.6 Pipe Wrap (ID/UT/WY Code)	Savings Per Building	New	2	15	$11	95%	95%	$0.67	0.73	0.73
Wyoming	Single Family	Water Heat Le 55 Gal	Pipe Insulation - Water Heater (WA/CA) - Above Code	R-8 Pipe Wrap (Above WA/CA Code)	R-3.6 Pipe Wrap (WA/CA Code)	Savings Per Building	New	5	15	$12	95%	95%	$0.28	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	57	4	$6	100%	N/A	$0.03	1	1
California	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	57	4	$6	100%	N/A	$0.03	0.02	0.02
California	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	456	12	$76	90%	90%	$0.02	8	8
California	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	41	12	$107	35%	90%	$0.34	0.30	0.30
California	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	196	12	$47	95%	85%	$0.03	3	3
California	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	341	12	$193	19%	55%	$0.07	0.00	0.00
California	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	557	12	$356	55%	21%	$0.08	1	1
California	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	962	12	$542	14%	75%	$0.07	2	2
California	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	456	12	$76	90%	90%	$0.02	0.22	0.22
California	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	41	12	$107	35%	90%	$0.34	0.00	0.00
California	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	196	12	$47	95%	85%	$0.03	0.09	0.09
California	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	341	12	$193	19%	55%	$0.07	0.00	0.00
California	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	557	12	$356	55%	21%	$0.08	0.04	0.04
California	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	962	12	$542	14%	75%	$0.07	0.06	0.06
California	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	338	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	866	15	$272	100%	N/A	$0.04	0.00	0.00
California	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	7,171	15	$-5701.6316	43%	N/A	$-0.09	23	32
California	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	210	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	539	15	$217	100%	N/A	$0.05	0.00	0.00
California	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	4,464	15	$-4156.7405	43%	N/A	$-0.11	0.59	0.61
California	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,132	15	$1,050	80%	98%	$0.11	109	109
California	Grocery	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,698	10	$1,701	10%	90%	$0.14	17	17
California	Grocery	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,132	5	$480	95%	72%	$0.10	86	86

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,830	15	$6,250	50%	94%	$0.25	138	138
California	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,132	15	$525	75%	76%	$0.03	59	59
California	Grocery	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	283	18	$720	45%	65%	$0.15	7	7
California	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	509	12	$5,450	10%	75%	$0.76	3	3
California	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,132	40	$30,390	2.0%	**%	$2.33	0.00	0.00
California	Grocery	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	566	12	$59	10%	39%	$0.01	1	1
California	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	13	25	$2,040	45%	60%	$0.10	0.30	0.30
California	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$300	25%	85%	.	0.00	0.00
California	Grocery	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	543	20	$613	45%	62%	$0.06	12	12
California	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,486	15%	83%	.	0.00	0.00
California	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	25	25	$333	15%	90%	$0.05	0.28	0.28
California	Grocery	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,170	10%	67%	.	0.00	0.00
California	Grocery	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$490	10%	85%	.	0.00	0.00
California	Grocery	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,415	7	$591	90%	85%	$0.04	91	91
California	Grocery	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	374	10	$526	35%	68%	$0.20	6	6
California	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,650	25	$10	15%	90%	$0.00	16	16
California	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,850	25	$78	15%	75%	$0.00	15	15
California	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	655	15	$1,050	80%	98%	$0.18	1	1
California	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,637	15	$6,250	50%	94%	$0.44	2	2
California	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	655	15	$525	75%	76%	$0.06	0.94	0.94
California	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	294	12	$5,450	10%	75%	$1.56	0.05	0.05
California	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	655	40	$30,390	2.0%	**%	$4.03	0.00	0.00
California	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	14	25	$333	35%	90%	$0.12	0.00	0.00
California	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	954	25	$10	80%	90%	$0.00	1	1
California	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	37	6	$0.81	100%	N/A	$0.00	6	6
California	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	37	6	$0.81	100%	N/A	$0.00	0.17	0.17
California	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	7	4	$8	100%	N/A	$0.31	0.07	0.07
California	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	7	4	$8	100%	N/A	$0.31	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.25	100%	N/A	$0.01	0.00	0.00
California	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.12	100%	N/A	$0.00	0.00	0.00
California	Grocery	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	33	20	$5	8.8%	100%	$0.02	0.46	0.46
California	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.25	100%	N/A	$0.01	0.00	0.00
California	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.12	100%	N/A	$0.00	0.00	0.00
California	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	903	15	$1,013	100%	N/A	$0.13	0.00	0.00
California	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,566	15	$2,027	100%	N/A	$0.09	11	13
California	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,582	15	$1,050	80%	98%	$0.08	10	10
California	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,640	15	$525	75%	76%	$0.02	11	11
California	Grocery	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	660	18	$720	45%	65%	$0.11	1	1
California	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,587	14	$5,160	5.0%	94%	$0.39	0.55	0.55
California	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,188	12	$5,450	10%	75%	$0.59	0.65	0.65
California	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,582	40	$30,390	2.0%	**%	$1.67	0.00	0.00
California	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	6,204	30	$60,087	5.0%	N/A	$0.89	0.88	1
California	Grocery	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,980	12	$59	10%	39%	$0.00	0.56	0.56
California	Grocery	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,301	25	$2,040	45%	60%	$0.09	4	4
California	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	209	25	$300	25%	85%	$0.14	0.31	0.31
California	Grocery	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	1,267	20	$613	45%	62%	$0.05	2	2
California	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,451	25	$2,486	15%	83%	$0.17	1	1
California	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	791	25	$333	15%	90%	$0.04	0.74	0.74
California	Grocery	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,170	10%	67%	.	0.00	0.00
California	Grocery	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$490	10%	85%	.	0.00	0.00
California	Grocery	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,300	7	$591	90%	85%	$0.03	17	17
California	Grocery	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	374	10	$526	35%	68%	$0.20	0.56	0.56
California	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	3,849	25	$10	15%	90%	$0.00	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,316	25	$78	15%	75%	$0.00	2	2
California	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	472	15	$810	100%	N/A	$0.20	0.00	0.00
California	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,214	15	$1,621	100%	N/A	$0.15	0.20	0.20
California	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	728	15	$1,050	80%	98%	$0.16	0.11	0.11
California	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,216	15	$525	75%	76%	$0.05	0.13	0.14
California	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	731	14	$5,160	5.0%	94%	$0.84	0.00	0.00
California	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	547	12	$5,450	10%	75%	$1.29	0.00	0.00
California	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	728	40	$30,390	2.0%	**%	$3.62	0.00	0.00
California	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,317	30	$30,865	5.0%	N/A	$0.86	0.01	0.01
California	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	96	25	$300	75%	85%	$0.30	0.00	0.00
California	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	364	25	$333	35%	90%	$0.09	0.01	0.01
California	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,773	25	$10	80%	90%	$0.00	0.16	0.16
California	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	2	2
California	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	682	8	$372	75%	70%	$0.09	68	68
California	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	567	15	$766	62%	90%	$0.15	60	60
California	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	286	8	$548	45%	57%	$0.32	11	11
California	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	46	13	$70	75%	95%	$0.18	6	6
California	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	24	24
California	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.06	0.06
California	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	682	8	$372	75%	70%	$0.09	1	1
California	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	567	15	$766	62%	90%	$0.15	1	1
California	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	286	8	$548	45%	57%	$0.32	0.29	0.29
California	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	46	13	$70	75%	95%	$0.18	0.16	0.16
California	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	0.47	0.47

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	461	10	$249	5.0%	95%	$0.08	3	3
California	Grocery	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,214	8	$3,000	5.0%	96%	$0.12	33	33
California	Grocery	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,161	8	$2,250	5.0%	96%	$0.12	25	25
California	Grocery	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	2,502	6	$928	85%	80%	$0.08	283	283
California	Grocery	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	1,535	6	$779	85%	80%	$0.10	173	173
California	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,450	13	$-58.185671	100%	N/A	$-0.00	0.00	0.00
California	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,959	13	$829	100%	N/A	$0.05	161	175
California	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,185	13	$14,310	25%	N/A	$0.56	67	73
California	Grocery	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,100	8	$548	5.0%	57%	$0.04	8	8
California	Grocery	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	623	15	$200	100%	N/A	$0.04	0.00	0.00
California	Grocery	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	767	15	$842	95%	N/A	$0.13	47	47
California	Grocery	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	684	13	$6,120	50%	N/A	$1.11	1	1
California	Grocery	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	435	9	$2	25%	N/A	$0.00	0.00	0.00
California	Grocery	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	217	15	$3,878	100%	N/A	$2.04	0.00	0.00
California	Grocery	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	288	8	$548	5.0%	57%	$0.32	1	1
California	Grocery	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	260	11	$101	95%	50%	$0.05	23	23
California	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	52	13	$44	95%	98%	$0.11	9	9
California	Grocery	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	504	10	$249	5.0%	95%	$0.07	0.10	0.10
California	Grocery	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,606	8	$3,000	5.0%	96%	$0.14	0.81	0.81

Table C-2.2. Commercial Measure Details

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California	Grocery	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,705	8	$2,250	5.0%	96%	$0.14	0.60	0.60
California	Grocery	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	1,936	6	$473	85%	80%	$0.05	6	6
California	Grocery	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	873	6	$340	85%	80%	$0.08	2	2
California	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	52	13	$44	95%	98%	$0.11	0.22	0.22
California	Grocery	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,270	13	$7,440	100%	N/A	$0.41	10	10
California	Grocery	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,296	8	$548	5.0%	57%	$0.04	0.28	0.28
California	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,086	4	$48	85%	N/A	$0.00	0.00	16
California	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,323	1	$32	100%	N/A	$0.00	0.00	0.00
California	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,386	1	$25	100%	N/A	$0.00	0.00	0.00
California	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,137	12	$606	15%	N/A	$0.01	7	46
California	Grocery	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	290	8	$548	5.0%	57%	$0.31	0.74	0.74
California	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.66	10%	90%	$0.05	0.04	0.04
California	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	58	4	$0.00	10%	45%	$0.00	0.50	0.50
California	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	4	4
California	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	116	116
California	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.45	5.0%	86%	$0.01	0.06	0.06
California	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	6	6
California	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.66	10%	90%	$0.05	0.00	0.00
California	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	58	4	$0.00	10%	45%	$0.00	0.01	0.01
California	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	0.10	0.10
California	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	3	3
California	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.45	5.0%	86%	$0.01	0.00	0.00
California	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	0.17	0.17

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California	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	117	6	$128	100%	N/A	$0.22	0.65	0.65
California	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	117	6	$128	100%	N/A	$0.22	0.02	0.02
California	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	27	6	$3	100%	N/A	$0.02	0.46	0.46
California	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	27	6	$3	100%	N/A	$0.02	0.00	0.00
California	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	2,934	8	$252	90%	45%	$0.01	165	165
California	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	4,867	15	$1,182	100%	77%	$0.03	517	517
California	Grocery	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	3,363	15	$364	95%	95%	$0.01	421	421
California	Grocery	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	609	15	$401	95%	95%	$0.08	76	76
California	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	3,292	10	$2,731	95%	80%	$0.12	347	347
California	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	4,470	10	$3,702	95%	80%	$0.12	472	472
California	Grocery	Refrigeration	Compressor VSD Retrofit	VSD Compressor	Constant Speed Compressor	Per Building	Existing	7,463	13	$1,334	60%	77%	$0.02	373	373
California	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	866	10	$3,300	95%	68%	$0.54	57	57
California	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	484	8	$47	50%	95%	$0.02	31	31
California	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	Existing	2,077	15	$706	50%	81%	$0.04	85	85
California	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	477	12	$452	95%	77%	$0.12	48	48
California	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	1,210	5	$192	95%	85%	$0.04	97	97
California	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	4,080	3	$640	95%	85%	$0.06	325	325
California	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	375	12	$-88.211516	95%	81%	$-0.03	40	40
California	Grocery	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	1,844	13	$263	80%	90%	$0.02	123	123
California	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	683	4	$493	95%	20%	$0.20	11	11
California	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	7,890	15	$1,956	75%	95%	$0.03	511	511
California	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	93	10	$17	100%	85%	$0.03	11	11
California	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	491	15	$545	75%	95%	$0.13	48	48
California	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	387	15	$349	75%	95%	$0.10	22	22
California	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	2,934	8	$252	90%	45%	$0.01	4	4
California	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	4,867	15	$1,182	100%	77%	$0.03	12	12

Table C-2.2. Commercial Measure Details

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California	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	3,292	10	$2,731	95%	80%	$0.12	8	8
California	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	4,470	10	$3,702	95%	80%	$0.12	12	12
California	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	866	10	$3,300	95%	68%	$0.54	1	1
California	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	484	8	$47	50%	95%	$0.02	0.86	0.86
California	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	New	2,077	15	$706	50%	81%	$0.04	2	2
California	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	477	12	$452	95%	77%	$0.12	1	1
California	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	1,210	5	$192	95%	85%	$0.04	3	3
California	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	2,040	3	$248	80%	90%	$0.04	4	4
California	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	375	12	$-88.211516	95%	81%	$-0.03	1	1
California	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	683	4	$493	95%	20%	$0.20	0.38	0.38
California	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	7,890	15	$1,956	75%	95%	$0.03	14	14
California	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	93	10	$17	100%	85%	$0.03	0.28	0.28
California	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	491	15	$545	75%	95%	$0.13	1	1
California	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	387	15	$349	75%	95%	$0.10	0.63	0.63
California	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$164	100%	N/A	$0.27	0.00	0.00
California	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	67	20	$220	100%	N/A	$0.32	2	3
California	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$12	100%	N/A	$0.02	0.00	0.00
California	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	16	20	$5	100%	N/A	$0.03	0.00	0.00
California	Grocery	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	362	20	$45	8.8%	100%	$0.01	4	4
California	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$164	100%	N/A	$0.27	0.00	0.00
California	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	67	20	$220	100%	N/A	$0.32	0.16	0.16
California	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$12	100%	N/A	$0.02	0.00	0.00
California	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	16	20	$5	100%	N/A	$0.03	0.00	0.00
California	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,404	15	$525	75%	76%	$0.03	34	34
California	Grocery	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	351	18	$720	45%	65%	$0.15	4	4
California	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,106	14	$5,160	5.0%	94%	$0.29	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	631	12	$5,450	10%	75%	$0.80	1	1
California	Grocery	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,404	12	$59	10%	39%	$0.00	2	2
California	Grocery	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,037	25	$2,040	45%	60%	$0.07	32	32
California	Grocery	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	345	25	$300	25%	85%	$0.08	2	2
California	Grocery	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	673	20	$613	45%	62%	$0.06	6	6
California	Grocery	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,622	25	$2,486	15%	83%	$0.07	16	16
California	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	1,004	25	$333	15%	90%	$0.03	4	4
California	Grocery	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,170	10%	67%	.	0.00	0.00
California	Grocery	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$490	10%	85%	.	0.00	0.00
California	Grocery	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,755	7	$591	90%	85%	$0.04	47	47
California	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,046	25	$10	15%	90%	$0.00	8	8
California	Grocery	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,295	25	$78	15%	75%	$0.00	8	8
California	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	531	15	$525	75%	76%	$0.07	0.32	0.32
California	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	796	14	$5,160	5.0%	94%	$0.77	0.03	0.03
California	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	238	12	$5,450	10%	75%	$1.83	0.01	0.01
California	Grocery	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	130	25	$300	75%	85%	$0.22	0.03	0.03
California	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	379	25	$333	35%	90%	$0.08	0.05	0.05
California	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	774	25	$10	80%	90%	$0.00	0.36	0.36
California	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	220	10	$30	100%	N/A	$0.02	18	18
California	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	220	10	$30	100%	N/A	$0.02	0.57	0.57
California	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,706	10	$367	5.0%	90%	$0.02	23	23
California	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,400	95%	65%	$0.22	132	132
California	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	138	15	$19	95%	76%	$0.02	17	17
California	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	3,450	20	$334	55%	45%	$0.01	153	153

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
California	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	2,580	10	$367	5.0%	90%	$0.02	0.58	0.58
California	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,400	95%	65%	$0.22	2	2
California	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	131	15	$19	95%	76%	$0.02	0.42	0.42
California	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	3,289	20	$334	55%	45%	$0.01	1	1
California	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	626	15	$322	75%	N/A	$0.06	0.00	0.47
California	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	619	15	$192	75%	N/A	$0.04	0.00	0.00
California	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	626	15	$322	75%	N/A	$0.06	0.00	0.01
California	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	619	15	$192	75%	N/A	$0.04	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	52	10	$833	75%	94%	$2.26	0.20	0.20
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	45%	35%	$0.36	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	45%	35%	$0.08	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	45%	55%	$0.40	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	45%	55%	$0.37	0.01	0.01
California	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	95	12	$54	40%	95%	$0.07	0.18	0.22
California	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	87	12	$54	40%	94%	$0.08	0.16	0.20
California	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	210	25	$800	2.5%	100%	$0.37	0.02	0.02
California	Grocery	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	0.03	0.03
California	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	16	9	$8	95%	25%	$0.08	0.02	0.02

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.08	1	1
California	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$117	75%	95%	$0.64	0.10	0.10
California	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	119	10	$2,730	55%	94%	$3.25	0.22	0.22
California	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$833	75%	94%	$2.28	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	45%	35%	$0.36	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	45%	35%	$0.08	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	45%	55%	$0.40	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	45%	55%	$0.37	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	91	12	$52	40%	95%	$0.07	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$52	40%	94%	$0.08	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	208	25	$640	2.5%	100%	$0.30	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.06	95%	25%	$0.00	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.08	0.02	0.02
California	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$117	75%	95%	$0.64	0.00	0.00
California	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	118	10	$2,730	55%	94%	$3.28	0.00	0.00
California	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	570	15	$1,655	75%	N/A	$0.33	18	24
California	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	34	15	$72	100%	N/A	$0.24	0.00	0.00
California	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	570	15	$1,655	75%	N/A	$0.33	0.62	0.65
California	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	34	15	$72	100%	N/A	$0.24	0.00	0.00

Table C-2.2. Commercial Measure Details

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California	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	53	10	$833	50%	94%	$2.21	1	1
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.36	0.00	0.01
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.04	0.05
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.40	0.00	0.04
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.34	0.39
California	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	95	12	$54	50%	95%	$0.07	2	3
California	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	87	12	$54	50%	95%	$0.08	2	3
California	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	214	25	$800	2.5%	100%	$0.36	0.34	0.34
California	Grocery	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	0.49	0.49
California	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	17	9	$8	95%	25%	$0.08	0.29	0.29
California	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.08	16	16
California	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$117	75%	95%	$0.62	1	1
California	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	122	10	$2,730	55%	94%	$3.18	2	2
California	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$833	50%	94%	$2.27	0.03	0.03
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.36	0.00	0.00
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.40	0.00	0.00
California	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.00	0.00

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California	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	91	12	$52	50%	95%	$0.07	0.07	0.07
California	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$52	50%	95%	$0.08	0.06	0.06
California	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	208	25	$640	2.5%	100%	$0.30	0.00	0.00
California	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.06	95%	25%	$0.00	0.00	0.00
California	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.08	0.39	0.39
California	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$117	75%	95%	$0.64	0.03	0.03
California	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	119	10	$2,730	55%	94%	$3.27	0.06	0.06
California	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	2,020	4	$230	100%	N/A	$0.03	10	12
California	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	3,117	4	$230	95%	30%	$0.02	28	28
California	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	2,020	4	$230	100%	N/A	$0.03	0.14	0.14
California	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	3,117	4	$230	95%	30%	$0.02	0.81	0.81
California	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	34	12	$5	90%	90%	$0.02	0.01	0.01
California	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	3	12	$8	25%	90%	$0.34	0.00	0.00
California	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	39	12	$9	95%	85%	$0.03	0.01	0.01
California	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	69	12	$39	7.0%	55%	$0.07	0.00	0.00
California	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	112	12	$72	15%	21%	$0.08	0.00	0.00
California	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	195	12	$109	11%	75%	$0.07	0.00	0.00
California	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	34	12	$5	90%	90%	$0.02	0.00	0.00
California	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	3	12	$8	25%	90%	$0.34	0.00	0.00
California	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	39	12	$9	95%	85%	$0.03	0.00	0.00
California	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	69	12	$39	7.0%	55%	$0.07	0.00	0.00
California	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	112	12	$72	15%	21%	$0.08	0.00	0.00
California	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	195	12	$109	11%	75%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,290	15	$3,625	5.0%	94%	$0.18	0.40	0.40
California	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	286	5	$2,469	95%	81%	$2.01	0.81	0.81
California	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,731	10	$11,403	25%	70%	$0.94	1	1
California	Health	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	1,145	15	$26,475	45%	90%	$2.64	1	1
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	5,171	20	$4,699	100%	N/A	$0.09	7	9
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	861	20	$783	100%	N/A	$0.09	0.00	0.00
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	3,160	20	$2,872	100%	N/A	$0.09	0.00	0.00
California	Health	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	6,870	15	$44,080	15%	68%	$0.11	2	2
California	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,290	15	$5,075	15%	98%	$0.25	1	1
California	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,832	7	$1,409	10%	94%	$0.14	0.58	0.58
California	Health	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	3,206	15	$126	65%	35%	$0.00	2	2
California	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	916	13	$1,020	75%	65%	$0.14	1	1
California	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,290	15	$2,537	75%	76%	$0.02	4	4
California	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,030	12	$5,450	2.5%	75%	$0.10	0.05	0.05
California	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,290	40	$46,885	2.0%	**%	$5.57	0.00	0.00
California	Health	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,145	12	$375	10%	39%	$0.00	0.13	0.13
California	Health	Cooling Chillers	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	88	25	$9,860	45%	64%	$0.05	0.07	0.07
California	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,450	25%	85%	.	0.00	0.00
California	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$12,018	15%	82%	.	0.00	0.00
California	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	0.00	25	$1,611	15%	90%	.	0.00	0.00
California	Health	Cooling Chillers	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$20,155	10%	72%	.	0.00	0.00
California	Health	Cooling Chillers	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$2,368	10%	85%	.	0.00	0.00
California	Health	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (CA State Code)	No Insulation	Per Building	Existing	343	15	$297	65%	45%	$0.10	0.30	0.30
California	Health	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,862	7	$2,858	90%	85%	$0.03	6	6

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	2,453	10	$3,313	35%	68%	$0.19	1	1
California	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	3,338	25	$65	15%	90%	$0.00	1	1
California	Health	Cooling Chillers	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,743	25	$495	15%	72%	$0.00	1	1
California	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,266	15	$1,933	5.0%	94%	$0.17	0.00	0.00
California	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	158	5	$2,469	95%	81%	$3.63	0.01	0.01
California	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	957	10	$10,263	25%	70%	$1.53	0.01	0.01
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	3,368	20	$4,229	100%	N/A	$0.13	0.21	0.21
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	561	20	$704	100%	N/A	$0.13	0.00	0.00
California	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	2,058	20	$2,584	100%	N/A	$0.13	0.00	0.00
California	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,266	15	$5,075	15%	98%	$0.46	0.01	0.01
California	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	1,013	7	$1,268	10%	94%	$0.23	0.00	0.00
California	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	506	13	$918	75%	65%	$0.22	0.02	0.02
California	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,266	15	$2,537	75%	76%	$0.03	0.06	0.06
California	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	570	12	$5,450	2.5%	75%	$0.15	0.00	0.00
California	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,266	40	$46,885	2.0%	**%	$10.07	0.00	0.00
California	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,846	25	$65	80%	90%	$0.00	0.07	0.07
California	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	1,772	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	3,396	15	$1,153	100%	N/A	$0.04	0.00	0.00
California	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	22,826	15	$-24795.121	43%	N/A	$-0.12	15	21
California	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	1,113	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	2,133	15	$923	100%	N/A	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	14,339	15	$-18523.75	43%	N/A	$-0.15	0.41	0.42
California	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	3,510	15	$3,625	5.0%	94%	$0.12	4	4
California	Health	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	10,532	15	$44,080	15%	68%	$0.10	26	26
California	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	3,510	15	$5,075	15%	98%	$0.17	12	12
California	Health	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	5,266	10	$8,221	10%	30%	$0.22	3	3
California	Health	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	3,510	5	$2,320	95%	72%	$0.15	56	56
California	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	8,776	15	$30,208	50%	94%	$0.39	90	90
California	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,510	15	$2,537	75%	76%	$0.02	38	38
California	Health	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	877	18	$3,480	45%	65%	$0.09	4	4
California	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,579	12	$5,450	2.5%	75%	$0.09	0.53	0.53
California	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	3,510	40	$46,885	2.0%	**%	$3.63	0.00	0.00
California	Health	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,755	12	$375	10%	39%	$0.00	1	1
California	Health	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	40	25	$9,860	45%	64%	$0.05	0.21	0.21
California	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,450	25%	85%	.	0.00	0.00
California	Health	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	1,685	20	$2,965	45%	62%	$0.04	8	8
California	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$12,018	15%	82%	.	0.00	0.00
California	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	77	25	$1,611	15%	90%	$0.02	0.18	0.18
California	Health	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$20,155	10%	72%	.	0.00	0.00
California	Health	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$2,368	10%	85%	.	0.00	0.00
California	Health	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,388	7	$2,858	90%	85%	$0.03	59	59
California	Health	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	2,453	10	$3,313	35%	68%	$0.19	9	9
California	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	5,117	25	$65	15%	90%	$0.00	10	10
California	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,738	25	$495	15%	72%	$0.00	9	9
California	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,065	15	$1,933	5.0%	94%	$0.11	0.06	0.06

Table C-2.2. Commercial Measure Details

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California	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,065	15	$5,075	15%	98%	$0.28	0.17	0.17
California	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	5,163	15	$30,208	50%	94%	$0.67	1	1
California	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,065	15	$2,537	75%	76%	$0.03	0.63	0.63
California	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	929	12	$5,450	2.5%	75%	$0.14	0.00	0.00
California	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,065	40	$46,885	2.0%	**%	$6.18	0.00	0.00
California	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	45	25	$1,611	35%	90%	$0.02	0.00	0.00
California	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	3,010	25	$65	80%	90%	$0.00	0.75	0.75
California	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	37	6	$0.81	100%	N/A	$0.00	1	1
California	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	37	6	$0.81	100%	N/A	$0.00	0.03	0.03
California	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	273	4	$307	100%	N/A	$0.31	0.49	0.49
California	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	273	4	$307	100%	N/A	$0.31	0.09	0.09
California	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	16	20	$2	100%	N/A	$0.01	0.00	0.00
California	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	46	20	$1	100%	N/A	$0.00	0.00	0.01
California	Health	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	311	20	$47	8.8%	100%	$0.02	0.84	0.84
California	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	16	20	$2	100%	N/A	$0.01	0.00	0.00
California	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	46	20	$1	100%	N/A	$0.00	0.00	0.00
California	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	7,204	15	$4,715	100%	N/A	$0.07	4	5
California	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	4,082	15	$3,625	5.0%	94%	$0.10	0.27	0.27
California	Health	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	34,212	15	$44,080	15%	68%	$0.15	4	4
California	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	4,082	15	$5,075	15%	98%	$0.14	0.81	0.81
California	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	11,404	15	$2,537	75%	76%	$0.03	8	8
California	Health	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,851	18	$3,480	45%	65%	$0.13	1	1
California	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	10,982	14	$13,151	5.0%	94%	$0.14	0.65	0.65
California	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	5,131	12	$5,450	2.5%	75%	$0.14	0.12	0.12

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	4,082	40	$46,885	2.0%	**%	$3.13	0.00	0.00
California	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	27,985	30	$92,106	5.0%	N/A	$0.96	0.21	0.29
California	Health	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	8,553	12	$375	10%	39%	$0.01	0.41	0.41
California	Health	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	12,766	25	$9,860	45%	64%	$0.08	4	4
California	Health	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	1,531	25	$1,450	25%	85%	$0.09	0.39	0.39
California	Health	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	5,474	20	$2,965	45%	62%	$0.05	1	1
California	Health	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	12,434	25	$12,018	15%	82%	$0.09	1	1
California	Health	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	5,320	25	$1,611	15%	90%	$0.03	0.84	0.84
California	Health	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$20,155	10%	72%	.	0.00	0.00
California	Health	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$2,368	10%	85%	.	0.00	0.00
California	Health	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	14,255	7	$2,858	90%	85%	$0.04	12	12
California	Health	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	2,453	10	$3,313	35%	68%	$0.19	0.62	0.62
California	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	16,623	25	$65	15%	90%	$0.00	2	2
California	Health	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	18,641	25	$495	15%	72%	$0.00	2	2
California	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	4,903	15	$3,772	100%	N/A	$0.09	0.11	0.11
California	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,627	15	$1,933	5.0%	94%	$0.08	0.00	0.00
California	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,627	15	$5,075	15%	98%	$0.22	0.01	0.01
California	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,338	15	$2,537	75%	76%	$0.04	0.14	0.14
California	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	7,066	14	$13,151	5.0%	94%	$0.22	0.01	0.01
California	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	3,302	12	$5,450	2.5%	75%	$0.21	0.00	0.00
California	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,627	40	$46,885	2.0%	**%	$4.86	0.00	0.00
California	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	18,872	30	$50,231	5.0%	N/A	$0.73	0.00	0.00
California	Health	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	985	25	$1,450	75%	85%	$0.14	0.00	0.01
California	Health	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	3,423	25	$1,611	35%	90%	$0.05	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	10,696	25	$65	80%	90%	$0.00	0.17	0.17
California	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	1,358	8	$377	5.0%	95%	$0.05	2	2
California	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,822	8	$818	75%	70%	$0.07	35	35
California	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,513	15	$2,045	62%	90%	$0.15	31	31
California	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	677	8	$2,652	90%	45%	$0.65	7	7
California	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	5	13	$8	75%	95%	$0.18	0.14	0.14
California	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	13,209	17	$8,975	5.0%	95%	$0.07	23	23
California	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	1,358	8	$377	5.0%	95%	$0.05	0.06	0.06
California	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,822	8	$818	75%	70%	$0.07	0.97	0.97
California	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,513	15	$2,045	62%	90%	$0.15	0.78	0.78
California	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	677	8	$2,652	90%	45%	$0.65	0.21	0.21
California	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	5	13	$8	75%	95%	$0.18	0.00	0.00
California	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	13,209	17	$8,975	5.0%	95%	$0.07	0.44	0.44
California	Health	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,603	10	$1,207	25%	95%	$0.11	13	13
California	Health	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	6,658	8	$9,633	15%	51%	$0.24	17	17
California	Health	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,993	8	$7,224	15%	51%	$0.24	13	13
California	Health	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	353	6	$131	15%	80%	$0.08	1	1
California	Health	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	217	6	$110	10%	80%	$0.10	0.60	0.60
California	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,000	13	$5,872	100%	N/A	$0.36	0.00	0.00
California	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,559	13	$-2089.1077	100%	N/A	$-0.10	0.00	0.00
California	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	6,970	13	$6,991	47%	N/A	$0.12	0.17	0.17
California	Health	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	6,454	8	$2,652	75%	45%	$0.07	73	73
California	Health	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	303	15	$165	100%	N/A	$0.06	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	381	15	$554	95%	N/A	$0.17	5	5
California	Health	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	339	16	$3,765	50%	N/A	$1.23	0.21	0.21
California	Health	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	211	11	$43	25%	N/A	$0.03	0.00	0.00
California	Health	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	99	15	$2,401	100%	N/A	$2.75	0.00	0.00
California	Health	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	136	8	$2,652	75%	45%	$3.22	1	1
California	Health	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	1,406	11	$547	95%	50%	$0.05	25	25
California	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	281	13	$240	95%	98%	$0.11	9	9
California	Health	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,506	10	$1,207	25%	95%	$0.11	0.33	0.33
California	Health	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,798	8	$9,633	15%	51%	$0.33	0.36	0.36
California	Health	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,598	8	$7,224	15%	51%	$0.33	0.26	0.26
California	Health	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	273	6	$66	15%	80%	$0.05	0.03	0.03
California	Health	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	123	6	$48	15%	80%	$0.08	0.01	0.01
California	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	281	13	$240	95%	98%	$0.11	0.25	0.25
California	Health	Lighting Interior Other	Lighting Package, High Efficiency	3% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,259	13	$6,746	100%	N/A	$0.37	2	2
California	Health	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	6,064	8	$2,652	75%	45%	$0.07	1	1
California	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	60,416	4	$580	98%	N/A	$0.00	0.00	0.00
California	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	52,823	1	$383	100%	N/A	$0.00	0.00	0.00
California	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,236	1	$305	100%	N/A	$0.00	0.00	0.00
California	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	60,924	12	$7,174	15%	N/A	$0.02	4	4

Table C-2.2. Commercial Measure Details

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California	Health	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,213	8	$2,652	75%	45%	$0.36	15	15
California	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	35	7	$9	10%	90%	$0.05	0.12	0.12
California	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	57	4	$0.00	10%	45%	$0.00	0.09	0.09
California	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	91	10	$0.45	95%	75%	$0.00	2	2
California	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	41	10	$29	95%	86%	$0.10	1	1
California	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	122	4	$2	5.0%	86%	$0.00	0.19	0.19
California	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	966	4	$193	60%	90%	$0.06	19	19
California	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	35	7	$9	10%	90%	$0.05	0.00	0.00
California	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	57	4	$0.00	10%	45%	$0.00	0.00	0.00
California	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	91	10	$0.45	95%	75%	$0.00	0.06	0.06
California	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	41	10	$29	95%	86%	$0.10	0.03	0.03
California	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	122	4	$2	5.0%	86%	$0.00	0.00	0.00
California	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	966	4	$193	60%	90%	$0.06	0.54	0.54
California	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	117	6	$127	100%	N/A	$0.22	0.12	0.12
California	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	117	6	$127	100%	N/A	$0.22	0.00	0.00
California	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	552	6	$64	100%	N/A	$0.02	1	1
California	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	552	6	$64	100%	N/A	$0.02	0.00	0.00
California	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	415	8	$35	15%	45%	$0.01	0.32	0.32
California	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	688	15	$167	5.0%	77%	$0.03	0.30	0.30
California	Health	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	475	15	$51	5.0%	95%	$0.01	0.25	0.25
California	Health	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	35	15	$23	5.0%	95%	$0.08	0.01	0.01
California	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	465	10	$386	2.5%	80%	$0.12	0.10	0.10
California	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	632	10	$523	2.5%	80%	$0.12	0.14	0.14
California	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	122	10	$3,300	5.0%	68%	$3.84	0.04	0.04
California	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	68	8	$6	5.0%	95%	$0.02	0.03	0.03
California	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	13	12	$13	95%	77%	$0.12	0.11	0.11
California	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	577	3	$90	10%	85%	$0.06	0.55	0.55

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	10	12	$-2.5814914	95%	81%	$-0.03	0.09	0.09
California	Health	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	260	13	$37	5.0%	90%	$0.02	0.13	0.13
California	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	19	4	$14	15%	20%	$0.20	0.00	0.00
California	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	13	10	$2	1.0%	85%	$0.03	0.00	0.00
California	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	69	15	$77	2.5%	95%	$0.13	0.01	0.01
California	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	11	15	$10	2.5%	95%	$0.10	0.00	0.00
California	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	415	8	$35	15%	45%	$0.01	0.00	0.00
California	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	688	15	$167	5.0%	77%	$0.03	0.00	0.00
California	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	465	10	$386	2.5%	80%	$0.12	0.00	0.00
California	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	632	10	$523	2.5%	80%	$0.12	0.00	0.00
California	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	122	10	$3,300	5.0%	68%	$3.84	0.00	0.00
California	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	68	8	$6	5.0%	95%	$0.02	0.00	0.00
California	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	13	12	$13	95%	77%	$0.12	0.00	0.00
California	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	288	3	$35	5.0%	90%	$0.04	0.00	0.00
California	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	10	12	$-2.5814914	95%	81%	$-0.03	0.00	0.00
California	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	19	4	$14	15%	20%	$0.20	0.00	0.00
California	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	13	10	$2	1.0%	85%	$0.03	0.00	0.00
California	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	69	15	$77	2.5%	95%	$0.13	0.00	0.00
California	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	11	15	$10	2.5%	95%	$0.10	0.00	0.00
California	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	566	20	$1,540	100%	N/A	$0.27	0.00	0.00
California	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	635	20	$2,065	100%	N/A	$0.32	5	6
California	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	497	20	$120	100%	N/A	$0.02	0.00	0.00
California	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	158	20	$55	100%	N/A	$0.03	0.00	0.00
California	Health	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	3,388	20	$429	8.8%	100%	$0.01	8	8
California	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	566	20	$1,540	100%	N/A	$0.27	0.00	0.00
California	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	635	20	$2,065	100%	N/A	$0.32	0.29	0.31
California	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	497	20	$120	100%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	158	20	$55	100%	N/A	$0.03	0.00	0.00
California	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	214	9	$28	100%	N/A	$0.02	6	6
California	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	737	4	$2,765	10%	50%	$1.04	1	1
California	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	214	9	$28	100%	N/A	$0.02	0.18	0.18
California	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	735	4	$2,765	10%	50%	$1.05	0.02	0.02
California	Health	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	39,411	15	$44,080	15%	68%	$0.10	29	29
California	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	13,137	15	$2,537	75%	76%	$0.02	53	53
California	Health	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	3,284	18	$3,480	45%	65%	$0.09	6	6
California	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	19,705	14	$13,151	5.0%	94%	$0.08	6	6
California	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	5,911	12	$5,450	2.5%	75%	$0.09	0.73	0.73
California	Health	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	13,137	12	$375	10%	39%	$0.00	3	3
California	Health	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	19,269	25	$9,860	45%	64%	$0.05	36	36
California	Health	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	3,237	25	$1,450	25%	85%	$0.04	4	4
California	Health	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	6,305	20	$2,965	45%	62%	$0.04	11	11
California	Health	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	33,897	25	$12,018	15%	82%	$0.03	26	26
California	Health	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	9,396	25	$1,611	15%	90%	$0.02	7	7
California	Health	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$20,155	10%	72%	.	0.00	0.00
California	Health	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$2,368	10%	85%	.	0.00	0.00
California	Health	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	16,421	7	$2,858	90%	85%	$0.03	75	75
California	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	19,149	25	$65	15%	90%	$0.00	13	13
California	Health	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	21,473	25	$495	15%	72%	$0.00	12	12
California	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	9,062	15	$2,537	75%	76%	$0.03	0.94	0.94
California	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	13,593	14	$13,151	5.0%	94%	$0.11	0.11	0.11
California	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	4,078	12	$5,450	2.5%	75%	$0.14	0.01	0.01
California	Health	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	2,233	25	$1,450	75%	85%	$0.06	0.11	0.11
California	Health	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	6,481	25	$1,611	35%	90%	$0.02	0.16	0.16
California	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	13,209	25	$65	80%	90%	$0.00	1	1
California	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	308	10	$42	100%	N/A	$0.02	5	5

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	308	10	$42	100%	N/A	$0.02	0.15	0.15
California	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,459	10	$1,777	5.0%	90%	$0.01	33	33
California	Health	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	29,188	15	$44,080	15%	68%	$0.17	110	110
California	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	130	18	$297	95%	85%	$0.24	3	3
California	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	992	15	$95	95%	76%	$0.01	25	25
California	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	24,810	20	$1,614	55%	45%	$0.01	220	220
California	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,107	15	$5,294	8.0%	77%	$0.12	10	10
California	Health	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	256	7	$72	65%	25%	$0.05	0.00	0.00
California	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	1,556	18	$1,705	65%	59%	$0.11	22	22
California	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	16,559	10	$1,777	5.0%	90%	$0.02	0.73	0.73
California	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	130	18	$297	95%	85%	$0.24	0.08	0.08
California	Health	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	10,875	50	$36,250	24%	98%	$0.28	1	1
California	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	844	15	$95	95%	76%	$0.01	0.54	0.54
California	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	21,112	20	$1,614	55%	45%	$0.01	2	2
California	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,346	15	$5,294	8.0%	77%	$0.14	0.22	0.22
California	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	1,324	18	$1,705	65%	59%	$0.13	0.39	0.39
California	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	14,611	15	$4,030	75%	N/A	$0.03	0.03	1
California	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	14,452	15	$2,409	75%	N/A	$0.02	0.00	0.00
California	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	14,524	15	$4,030	75%	N/A	$0.03	0.00	0.04
California	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	14,367	15	$2,409	75%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.06	0.01	0.01
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.09	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.09	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.10	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.06	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,225	10	$4,028	55%	94%	$0.47	0.37	0.37
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.36	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.40	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.37	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	147	12	$83	10%	95%	$0.07	0.00	0.00

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California	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	135	12	$83	10%	94%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,903	25	$10,000	2.5%	100%	$0.20	0.07	0.07
California	Health	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	245	12	$318	80%	70%	$0.17	0.07	0.07
California	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	390	9	$28	95%	25%	$0.01	0.05	0.05
California	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.08	0.06	0.06
California	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	336	10	$23	95%	73%	$0.01	0.13	0.13
California	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	271	10	$58	95%	62%	$0.03	0.09	0.09
California	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	612	10	$392	75%	95%	$0.09	0.25	0.25
California	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,794	10	$386	2.5%	94%	$0.02	0.03	0.03
California	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.06	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.09	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.09	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.10	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.07	0.00	0.00

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California	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.06	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,207	10	$4,028	55%	94%	$0.48	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.36	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.40	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.37	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	146	12	$83	10%	95%	$0.07	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	134	12	$83	10%	94%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,829	25	$8,000	2.5%	100%	$0.16	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	384	9	$0.20	95%	25%	$0.00	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.08	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	336	10	$23	95%	73%	$0.01	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	603	10	$392	75%	95%	$0.09	0.00	0.00
California	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,752	10	$386	2.5%	94%	$0.02	0.00	0.00
California	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	13,307	15	$20,695	75%	N/A	$0.18	64	67
California	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	798	15	$903	100%	N/A	$0.13	0.00	0.00
California	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	13,228	15	$20,695	75%	N/A	$0.18	2	2
California	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	793	15	$903	100%	N/A	$0.13	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.06	0.16	0.19
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.08	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.09	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.09	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.10	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.06	0.00	0.00
California	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,253	10	$4,028	75%	94%	$0.46	6	6
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.36	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.40	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.37	0.01	0.01
California	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	147	12	$83	10%	95%	$0.07	0.09	0.11

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	135	12	$83	10%	95%	$0.08	0.09	0.10
California	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	5,013	25	$10,000	2.5%	100%	$0.19	0.93	0.93
California	Health	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	250	12	$318	80%	70%	$0.16	1	1
California	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	398	9	$28	95%	25%	$0.01	0.73	0.73
California	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.08	0.78	0.78
California	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	336	10	$23	95%	73%	$0.01	1	1
California	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	271	10	$58	95%	62%	$0.03	1	1
California	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	626	10	$392	75%	95%	$0.09	3	3
California	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,857	10	$386	2.5%	94%	$0.02	0.47	0.47
California	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.06	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.08	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.09	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.09	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.10	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.06	0.00	0.00
California	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,211	10	$4,028	75%	94%	$0.47	0.14	0.14
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.36	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.40	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.37	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	146	12	$83	10%	95%	$0.07	0.00	0.00
California	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	134	12	$83	10%	95%	$0.08	0.00	0.00
California	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,844	25	$8,000	2.5%	100%	$0.16	0.00	0.00
California	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	385	9	$0.20	95%	25%	$0.00	0.01	0.01
California	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.08	0.01	0.01
California	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	336	10	$23	95%	73%	$0.01	0.04	0.04
California	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	605	10	$392	75%	95%	$0.09	0.07	0.07
California	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,761	10	$386	2.5%	94%	$0.02	0.01	0.01
California	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	252	4	$28	100%	N/A	$0.03	6	6
California	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	252	4	$28	100%	N/A	$0.03	0.09	0.09
California	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	151	12	$25	90%	90%	$0.02	0.16	0.16
California	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	13	12	$35	55%	90%	$0.34	0.00	0.00
California	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	65	12	$15	95%	85%	$0.03	0.06	0.06

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California	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	113	12	$64	19%	55%	$0.07	0.00	0.00
California	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	184	12	$118	55%	21%	$0.08	0.02	0.02
California	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	319	12	$179	11%	75%	$0.07	0.03	0.03
California	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	151	12	$25	90%	90%	$0.02	0.00	0.00
California	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	13	12	$35	55%	90%	$0.34	0.00	0.00
California	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	65	12	$15	95%	85%	$0.03	0.00	0.00
California	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	113	12	$64	19%	55%	$0.07	0.00	0.00
California	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	184	12	$118	55%	21%	$0.08	0.00	0.00
California	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	319	12	$179	11%	75%	$0.07	0.00	0.00
California	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	270	15	$2,000	50%	94%	$0.85	2	2
California	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	169	5	$1,362	95%	81%	$1.87	2	2
California	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,022	10	$6,291	25%	70%	$0.88	3	3
California	Lodging	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	676	15	$14,607	45%	30%	$2.47	1	1
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,838	20	$4,685	100%	N/A	$0.16	20	26
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	946	20	$1,561	100%	N/A	$0.16	0.00	0.00
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,110	20	$3,484	100%	N/A	$0.16	0.00	0.00
California	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,353	15	$2,800	45%	98%	$0.24	10	10
California	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,082	7	$777	10%	94%	$0.13	1	1
California	Lodging	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	1,894	15	$69	65%	35%	$0.00	7	7
California	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	541	13	$562	75%	65%	$0.13	4	4
California	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,353	15	$1,400	75%	76%	$0.12	12	12
California	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	608	12	$5,450	10%	75%	$1.16	0.68	0.68
California	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,353	40	$81,040	2.0%	**%	$5.20	0.00	0.00

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California	Lodging	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	676	12	$426	10%	39%	$0.08	0.39	0.39
California	Lodging	Cooling Chillers	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	52	25	$5,440	45%	61%	$10.16	0.21	0.21
California	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$800	25%	85%	.	0.00	0.00
California	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,631	15%	76%	.	0.00	0.00
California	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	0.00	25	$888	15%	90%	.	0.00	0.00
California	Lodging	Cooling Chillers	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$11,120	10%	68%	.	0.00	0.00
California	Lodging	Cooling Chillers	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,306	10%	85%	.	0.00	0.00
California	Lodging	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (CA State Code)	No Insulation	Per Building	Existing	202	15	$164	65%	45%	$0.09	0.88	0.88
California	Lodging	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,691	7	$1,577	90%	85%	$0.17	19	19
California	Lodging	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	2,807	10	$3,764	35%	68%	$0.19	8	8
California	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,972	25	$74	15%	90%	$0.00	3	3
California	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,211	25	$562	15%	56%	$0.02	2	2
California	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	154	15	$1,066	50%	94%	$0.79	0.03	0.03
California	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	96	5	$1,362	95%	81%	$3.28	0.03	0.03
California	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	585	10	$5,662	25%	70%	$1.38	0.04	0.04
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,960	20	$4,217	100%	N/A	$0.21	0.58	0.58
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	653	20	$1,405	100%	N/A	$0.21	0.00	0.00
California	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,458	20	$3,135	100%	N/A	$0.21	0.00	0.00
California	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	774	15	$2,800	45%	98%	$0.41	0.14	0.14
California	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	619	7	$700	10%	94%	$0.21	0.02	0.02
California	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	309	13	$506	75%	65%	$0.20	0.06	0.06
California	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	774	15	$1,400	75%	76%	$0.21	0.17	0.17
California	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	348	12	$5,450	10%	75%	$2.03	0.01	0.01
California	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	774	40	$81,040	2.0%	**%	$9.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	774	15	$8,000	10%	75%	$1.18	0.02	0.02
California	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,128	25	$74	80%	90%	$0.01	0.20	0.20
California	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	455	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,163	15	$726	100%	N/A	$0.07	0.00	0.00
California	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	9,630	15	$-15204.351	43%	N/A	$-0.18	9	14
California	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	313	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	800	15	$580	100%	N/A	$0.08	0.00	0.00
California	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	6,624	15	$-11084.641	43%	N/A	$-0.19	0.26	0.27
California	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	304	15	$2,000	50%	94%	$0.75	5	5
California	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,520	15	$2,800	45%	98%	$0.21	27	27
California	Lodging	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,280	10	$4,536	10%	30%	$0.28	2	2
California	Lodging	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,520	5	$1,280	95%	72%	$0.20	40	40
California	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	3,801	15	$16,666	50%	94%	$0.50	64	64
California	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,520	15	$1,400	75%	76%	$0.11	27	27
California	Lodging	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	380	18	$1,920	45%	65%	$0.53	3	3
California	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	684	12	$5,450	10%	75%	$1.03	1	1
California	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,520	40	$81,040	2.0%	**%	$4.63	0.00	0.00
California	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	3,418	15	$3,101	60%	97%	$0.10	58	58
California	Lodging	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	760	12	$426	10%	39%	$0.07	0.76	0.76
California	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	17	25	$5,440	45%	61%	$29.88	0.12	0.12
California	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$800	25%	85%	.	0.00	0.00
California	Lodging	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	729	20	$1,635	45%	62%	$0.22	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,631	15%	76%	.	0.00	0.00
California	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	33	25	$888	15%	90%	$2.56	0.11	0.11
California	Lodging	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$11,120	10%	68%	.	0.00	0.00
California	Lodging	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,306	10%	85%	.	0.00	0.00
California	Lodging	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,900	7	$1,577	90%	85%	$0.15	37	37
California	Lodging	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	2,807	10	$3,764	35%	68%	$0.19	15	15
California	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,216	25	$74	15%	90%	$0.00	6	6
California	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,485	25	$562	15%	56%	$0.02	4	4
California	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	194	15	$1,066	50%	94%	$0.63	0.09	0.09
California	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	972	15	$2,800	45%	98%	$0.33	0.41	0.41
California	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,430	15	$16,666	50%	94%	$0.78	1	1
California	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	972	15	$1,400	75%	76%	$0.16	0.48	0.48
California	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	437	12	$5,450	10%	75%	$1.62	0.02	0.02
California	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	972	40	$81,040	2.0%	**%	$7.24	0.00	0.00
California	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,185	15	$3,101	60%	97%	$0.16	0.97	0.97
California	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	21	25	$888	35%	90%	$4.01	0.00	0.00
California	Lodging	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	972	15	$8,000	10%	75%	$0.94	0.04	0.04
California	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,416	25	$74	80%	90%	$0.01	0.49	0.49
California	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,881	15	$2,800	45%	98%	$0.17	28	28
California	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,881	15	$1,400	75%	76%	$0.09	34	34
California	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	846	12	$5,450	10%	75%	$0.83	1	1
California	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,881	40	$81,040	2.0%	**%	$3.74	0.00	0.00
California	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	4,230	15	$3,101	60%	97%	$0.08	74	74
California	Lodging	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	940	12	$426	10%	39%	$0.06	0.97	0.97

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Cooling Room	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	21	25	$5,440	45%	61%	$24.15	0.15	0.15
California	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$800	25%	85%	.	0.00	0.00
California	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,631	15%	76%	.	0.00	0.00
California	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	41	25	$888	15%	90%	$2.07	0.14	0.14
California	Lodging	Cooling Room	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$11,120	10%	68%	.	0.00	0.00
California	Lodging	Cooling Room	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,306	10%	85%	.	0.00	0.00
California	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,654	9	$1,056	50%	N/A	$0.10	17	21
California	Lodging	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	2,807	10	$3,764	35%	68%	$0.19	17	17
California	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,742	25	$74	15%	90%	$0.00	9	9
California	Lodging	Cooling Room	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,075	25	$562	15%	56%	$0.02	6	6
California	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,240	15	$2,800	45%	98%	$0.26	0.43	0.43
California	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,240	15	$1,400	75%	76%	$0.13	0.56	0.56
California	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	558	12	$5,450	10%	75%	$1.27	0.03	0.03
California	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,240	40	$81,040	2.0%	**%	$5.68	0.00	0.00
California	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,788	15	$3,101	60%	97%	$0.13	1	1
California	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	27	25	$888	35%	90%	$3.14	0.00	0.00
California	Lodging	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,240	15	$8,000	10%	75%	$0.74	0.05	0.05
California	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	1,093	9	$844	50%	N/A	$0.12	0.29	0.30
California	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,808	25	$74	80%	90%	$0.00	0.57	0.57
California	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	12	6	$0.27	100%	N/A	$0.00	1	1
California	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	12	6	$0.27	100%	N/A	$0.00	0.04	0.04
California	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	34	4	$38	100%	N/A	$0.31	0.26	0.26
California	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	34	4	$38	100%	N/A	$0.31	0.04	0.04
California	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$2	100%	N/A	$0.01	0.00	0.00
California	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	47	20	$1	100%	N/A	$0.00	0.00	0.07
California	Lodging	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	322	20	$48	8.8%	100%	$0.02	3	3
California	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	17	20	$2	100%	N/A	$0.01	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	47	20	$1	100%	N/A	$0.00	0.00	0.00
California	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,527	15	$2,702	100%	N/A	$0.20	0.00	0.00
California	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,785	15	$5,405	100%	N/A	$0.13	43	57
California	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	367	15	$2,000	50%	94%	$0.62	3	3
California	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,836	15	$2,800	45%	98%	$0.17	16	16
California	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,649	15	$1,400	75%	76%	$0.03	53	53
California	Lodging	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,162	18	$1,920	45%	65%	$0.17	6	6
California	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,219	14	$13,760	5.0%	94%	$0.39	3	3
California	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,092	12	$5,450	10%	75%	$0.34	2	2
California	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,836	40	$81,040	2.0%	**%	$3.83	0.00	0.00
California	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	10,232	30	$60,233	5.0%	N/A	$1.44	2	4
California	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	10,452	15	$3,101	60%	97%	$0.03	114	114
California	Lodging	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,486	12	$426	10%	39%	$0.02	2	2
California	Lodging	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,907	25	$5,440	45%	61%	$0.11	22	22
California	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	585	25	$800	25%	85%	$0.13	1	1
California	Lodging	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	2,231	20	$1,635	45%	62%	$0.07	9	9
California	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,956	25	$6,631	15%	76%	$0.08	14	14
California	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	2,049	25	$888	15%	90%	$0.04	4	4
California	Lodging	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$11,120	10%	68%	.	0.00	0.00
California	Lodging	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,306	10%	85%	.	0.00	0.00
California	Lodging	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,811	7	$1,577	90%	85%	$0.05	68	68
California	Lodging	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	2,807	10	$3,764	35%	68%	$0.19	9	9
California	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	6,776	25	$74	15%	90%	$0.00	12	12
California	Lodging	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,599	25	$562	15%	56%	$0.01	8	8

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	1,044	15	$2,162	100%	N/A	$0.24	0.00	0.00
California	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	3,292	15	$4,324	100%	N/A	$0.15	1	1
California	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	232	15	$1,066	50%	94%	$0.53	0.05	0.05
California	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,160	15	$2,800	45%	98%	$0.28	0.25	0.25
California	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,937	15	$1,400	75%	76%	$0.05	0.86	0.86
California	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,666	14	$13,760	5.0%	94%	$0.61	0.06	0.06
California	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,322	12	$5,450	10%	75%	$0.53	0.05	0.05
California	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,160	40	$81,040	2.0%	**%	$6.07	0.00	0.00
California	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	6,984	30	$82,308	5.0%	N/A	$1.09	0.06	0.06
California	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	6,605	15	$3,101	60%	97%	$0.05	1	1
California	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	369	25	$800	75%	85%	$0.21	0.04	0.04
California	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	1,295	25	$888	35%	90%	$0.07	0.08	0.08
California	Lodging	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,937	15	$8,000	10%	75%	$0.31	0.08	0.08
California	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	4,282	25	$74	80%	90%	$0.00	0.85	0.86
California	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	749	8	$208	5.0%	95%	$0.05	5	5
California	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,144	8	$608	75%	70%	$0.09	96	96
California	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	950	15	$1,284	62%	90%	$0.15	85	85
California	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	831	8	$1,463	90%	47%	$0.29	44	44
California	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	70	13	$105	75%	95%	$0.18	8	8
California	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	7,288	17	$4,952	5.0%	95%	$0.07	55	55
California	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	749	8	$208	5.0%	95%	$0.05	0.15	0.15
California	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,144	8	$608	75%	70%	$0.09	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	950	15	$1,284	62%	90%	$0.15	2	2
California	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	831	8	$1,463	90%	47%	$0.29	1	1
California	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	70	13	$105	75%	95%	$0.18	0.20	0.20
California	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	7,288	17	$4,952	5.0%	95%	$0.07	1	1
California	Lodging	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	185	10	$666	25%	95%	$0.51	5	5
California	Lodging	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,036	8	$7,155	5.0%	92%	$1.14	6	6
California	Lodging	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	777	8	$5,366	5.0%	92%	$1.14	4	4
California	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	428	13	$671	100%	N/A	$0.19	34	34
California	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	356	13	$-68.769011	100%	N/A	$-0.02	0.00	0.00
California	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	933	13	$7,870	25%	N/A	$1.04	22	22
California	Lodging	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,460	8	$1,463	5.0%	47%	$0.17	4	4
California	Lodging	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	58	15	$39	100%	N/A	$0.08	0.00	0.00
California	Lodging	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	72	15	$171	95%	N/A	$0.27	3	3
California	Lodging	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	64	29	$1,259	50%	N/A	$1.82	0.11	0.11
California	Lodging	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	41	20	$-1.7063436	25%	N/A	$-0.00	0.00	0.00
California	Lodging	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$797	100%	N/A	$4.40	0.00	0.00
California	Lodging	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	46	8	$1,463	5.0%	47%	$5.22	0.16	0.16
California	Lodging	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	178	11	$69	95%	50%	$0.05	13	13
California	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	35	13	$30	95%	98%	$0.11	5	5
California	Lodging	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	408	10	$666	25%	95%	$0.23	0.34	0.34

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	777	8	$7,155	5.0%	92%	$1.53	0.13	0.13
California	Lodging	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	582	8	$5,366	5.0%	92%	$1.53	0.09	0.09
California	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	35	13	$30	95%	98%	$0.11	0.11	0.11
California	Lodging	Lighting Interior Other	Lighting Package, High Efficiency	15% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,061	13	$7,921	100%	N/A	$0.32	12	12
California	Lodging	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,214	8	$1,463	5.0%	47%	$0.08	0.27	0.27
California	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	49,358	4	$872	85%	N/A	$0.00	0.00	89
California	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	43,169	1	$577	100%	N/A	$0.00	0.00	0.00
California	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,215	1	$454	100%	N/A	$0.00	0.00	0.00
California	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	49,770	12	$10,812	15%	N/A	$0.03	50	296
California	Lodging	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,951	8	$1,463	5.0%	47%	$0.06	7	7
California	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	5	7	$1	10%	90%	$0.05	0.08	0.08
California	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	19	4	$0.00	25%	45%	$0.00	0.34	0.34
California	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	10	10	$0.05	95%	75%	$0.00	1	1
California	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	97	97
California	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	19	4	$1	5.0%	86%	$0.02	0.13	0.13
California	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	200	4	$40	60%	90%	$0.06	17	17
California	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	5	7	$1	10%	90%	$0.05	0.00	0.00
California	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	19	4	$0.00	25%	45%	$0.00	0.00	0.00
California	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	10	10	$0.05	95%	75%	$0.00	0.03	0.03
California	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	2	2
California	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	19	4	$1	5.0%	86%	$0.02	0.00	0.00
California	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	200	4	$40	60%	90%	$0.06	0.48	0.48
California	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	39	6	$42	100%	N/A	$0.22	0.18	0.18

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	39	6	$42	100%	N/A	$0.22	0.00	0.00
California	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	103	6	$12	100%	N/A	$0.02	1	1
California	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	103	6	$12	100%	N/A	$0.02	0.00	0.00
California	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	452	10	$375	5.0%	80%	$0.12	0.32	0.32
California	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	614	10	$509	5.0%	80%	$0.12	0.43	0.43
California	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	12	10	$2	1.0%	85%	$0.03	0.00	0.00
California	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	19	15	$18	0.0%	95%	$0.10	0.00	0.00
California	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	452	10	$375	5.0%	80%	$0.12	0.00	0.00
California	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	614	10	$509	5.0%	80%	$0.12	0.01	0.01
California	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	12	10	$2	1.0%	85%	$0.03	0.00	0.00
California	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	19	15	$18	0.0%	95%	$0.10	0.00	0.00
California	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	585	20	$1,592	100%	N/A	$0.27	0.00	0.00
California	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	656	20	$2,135	100%	N/A	$0.32	22	26
California	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	514	20	$124	100%	N/A	$0.02	0.00	0.00
California	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	163	20	$57	100%	N/A	$0.03	0.00	0.00
California	Lodging	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	3,503	20	$444	8.8%	100%	$0.01	36	36
California	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	585	20	$1,592	100%	N/A	$0.27	0.00	0.00
California	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	656	20	$2,135	100%	N/A	$0.32	1	1
California	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	514	20	$124	100%	N/A	$0.02	0.00	0.00
California	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	163	20	$57	100%	N/A	$0.03	0.00	0.00
California	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,848	15	$1,400	75%	76%	$0.03	147	147
California	Lodging	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,212	18	$1,920	45%	65%	$0.17	18	18
California	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	7,272	14	$13,760	5.0%	94%	$0.22	17	17
California	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,181	12	$5,450	10%	75%	$0.32	8	8
California	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	10,900	15	$3,101	60%	97%	$0.03	313	313

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,848	12	$426	10%	39%	$0.01	8	8
California	Lodging	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,111	25	$5,440	45%	61%	$0.07	84	84
California	Lodging	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	1,194	25	$800	25%	85%	$0.07	10	10
California	Lodging	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	2,327	20	$1,635	45%	62%	$0.07	26	26
California	Lodging	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	18,722	25	$6,631	15%	76%	$0.03	86	86
California	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	3,467	25	$888	15%	90%	$0.02	18	18
California	Lodging	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$11,120	10%	68%	.	0.00	0.00
California	Lodging	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,306	10%	85%	.	0.00	0.00
California	Lodging	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,060	7	$1,577	90%	85%	$0.05	178	178
California	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	7,066	25	$74	15%	90%	$0.00	33	33
California	Lodging	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,924	25	$562	15%	56%	$0.01	22	22
California	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,232	15	$1,400	75%	76%	$0.05	2	2
California	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,848	14	$13,760	5.0%	94%	$0.34	0.28	0.28
California	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,454	12	$5,450	10%	75%	$0.49	0.14	0.14
California	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	7,266	15	$3,101	60%	97%	$0.05	4	4
California	Lodging	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	796	25	$800	75%	85%	$0.10	0.25	0.25
California	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	2,311	25	$888	35%	90%	$0.04	0.36	0.36
California	Lodging	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,232	15	$8,000	10%	75%	$0.28	0.23	0.23
California	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	4,711	25	$74	80%	90%	$0.00	2	2
California	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	276	10	$37	100%	N/A	$0.02	19	19
California	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	276	10	$37	100%	N/A	$0.02	0.60	0.60
California	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	4,144	10	$980	5.0%	90%	$0.03	29	29
California	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$5,250	95%	45%	$0.49	76	76
California	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	211	15	$52	95%	76%	$0.03	23	23

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	5,283	20	$890	55%	45%	$0.02	202	202
California	Lodging	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	141	7	$40	65%	25%	$0.05	0.00	0.00
California	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	4,048	10	$980	5.0%	90%	$0.03	0.76	0.76
California	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$5,250	95%	45%	$0.49	1	1
California	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	206	15	$52	95%	76%	$0.03	0.57	0.57
California	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	5,161	20	$890	55%	45%	$0.02	2	2
California	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,632	15	$2,015	75%	N/A	$0.03	0.02	2
California	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,549	15	$1,204	75%	N/A	$0.02	0.00	0.00
California	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,632	15	$2,015	75%	N/A	$0.03	0.00	0.08
California	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,549	15	$1,204	75%	N/A	$0.02	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.06	0.49	0.61
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.08	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.09	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.09	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.10	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.06	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	640	10	$2,222	55%	80%	$0.49	0.68	0.68
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.36	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.40	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.37	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	260	12	$148	60%	95%	$0.07	0.33	0.41
California	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	239	12	$148	60%	94%	$0.08	0.30	0.37
California	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,561	25	$5,000	2.5%	100%	$0.19	0.14	0.14
California	Lodging	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	128	12	$159	80%	90%	$0.16	0.21	0.21
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	203	9	$224	95%	25%	$0.17	0.11	0.11
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.08	1	1
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,399	10	$186	95%	73%	$0.01	5	5
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,741	10	$465	95%	62%	$0.02	3	3
California	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	320	10	$3,140	75%	95%	$1.40	0.56	0.56
California	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,459	10	$375	5.0%	94%	$0.04	0.09	0.09
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.06	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.08	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.09	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.09	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.10	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.06	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	634	10	$2,222	55%	80%	$0.50	0.01	0.01
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.36	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.40	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.37	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	251	12	$142	60%	95%	$0.07	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	230	12	$142	60%	94%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,537	25	$4,000	2.5%	100%	$0.15	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	201	9	$1	95%	25%	$0.00	0.00	0.00
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.08	0.03	0.03
California	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,399	10	$186	95%	73%	$0.01	0.11	0.11
California	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	317	10	$3,140	75%	95%	$1.41	0.01	0.01
California	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,446	10	$375	5.0%	94%	$0.04	0.00	0.00
California	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	6,951	15	$10,347	75%	N/A	$0.17	99	132
California	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	417	15	$451	100%	N/A	$0.12	0.00	0.00
California	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	6,951	15	$10,347	75%	N/A	$0.17	3	4
California	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	417	15	$451	100%	N/A	$0.12	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.06	6	7
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.08	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.09	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.07	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.09	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.10	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.07	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.06	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	654	10	$2,222	25%	94%	$0.48	4	4
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.36	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.02	0.02
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.40	0.00	0.02
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.15	0.17
California	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	260	12	$148	50%	95%	$0.07	3	4
California	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	239	12	$148	50%	95%	$0.08	3	3
California	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,618	25	$5,000	2.5%	100%	$0.19	2	2
California	Lodging	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	130	12	$159	80%	90%	$0.16	2	2
California	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	208	9	$224	95%	25%	$0.16	1	1
California	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.08	18	18
California	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,399	10	$186	95%	73%	$0.01	76	76
California	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,741	10	$465	95%	62%	$0.02	52	52
California	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	327	10	$3,140	75%	95%	$1.37	7	7
California	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,492	10	$375	2.5%	94%	$0.04	0.65	0.65
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.06	0.15	0.15
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.09	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.07	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.09	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.10	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.07	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.07	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.06	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	636	10	$2,222	25%	94%	$0.50	0.10	0.10
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.36	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.40	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	251	12	$142	50%	95%	$0.07	0.08	0.08
California	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	230	12	$142	50%	95%	$0.08	0.08	0.08
California	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,545	25	$4,000	2.5%	100%	$0.15	0.00	0.00
California	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	202	9	$1	95%	25%	$0.00	0.03	0.03

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.08	0.44	0.44
California	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,399	10	$186	95%	73%	$0.01	1	1
California	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	318	10	$3,140	75%	95%	$1.41	0.16	0.16
California	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,450	10	$375	2.5%	94%	$0.04	0.01	0.01
California	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	155	4	$17	100%	N/A	$0.03	76	88
California	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	239	4	$17	95%	30%	$0.02	206	206
California	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	155	4	$17	100%	N/A	$0.03	1	1
California	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	239	4	$17	95%	30%	$0.02	5	5
California	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	612	15	$625	25%	94%	$0.12	3	3
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,284	20	$1,626	100%	N/A	$0.13	15	18
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	428	20	$542	100%	N/A	$0.13	0.00	0.00
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	954	20	$1,209	100%	N/A	$0.13	0.00	0.00
California	Miscellaneous	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,836	15	$7,600	5.0%	65%	$0.38	1	1
California	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	612	15	$875	45%	95%	$0.16	6	6
California	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	612	15	$437	75%	76%	$0.07	8	8
California	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	275	12	$5,450	1.0%	75%	$2.04	0.04	0.04
California	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	612	40	$25,325	2.0%	**%	$3.59	0.00	0.00
California	Miscellaneous	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	306	12	$33	5.0%	39%	$0.01	0.14	0.14
California	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	23	25	$1,700	45%	61%	$0.65	0.15	0.15
California	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$250	25%	85%	.	0.00	0.00
California	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,072	15%	80%	.	0.00	0.00
California	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	0.00	25	$277	15%	90%	.	0.00	0.00
California	Miscellaneous	Cooling Chillers	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,475	10%	73%	.	0.00	0.00
California	Miscellaneous	Cooling Chillers	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$408	10%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	765	7	$492	90%	85%	$0.09	13	13
California	Miscellaneous	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	233	10	$293	35%	68%	$0.18	1	1
California	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	892	25	$5	15%	90%	$0.00	2	2
California	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,000	25	$43	15%	72%	$0.00	2	2
California	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	338	15	$333	25%	94%	$0.11	0.05	0.05
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	857	20	$1,464	100%	N/A	$0.17	0.39	0.39
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	285	20	$488	100%	N/A	$0.17	0.00	0.00
California	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	637	20	$1,088	100%	N/A	$0.17	0.00	0.00
California	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	338	15	$875	45%	95%	$0.30	0.08	0.08
California	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	338	15	$437	75%	76%	$0.12	0.12	0.12
California	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	152	12	$5,450	1.0%	75%	$3.73	0.00	0.00
California	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	338	40	$25,325	2.0%	**%	$6.50	0.00	0.00
California	Miscellaneous	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	338	15	$2,500	10%	75%	$0.68	0.01	0.01
California	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	493	25	$5	80%	90%	$0.00	0.14	0.14
California	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	205	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	526	15	$252	100%	N/A	$0.05	0.00	0.00
California	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,355	15	$-5279.2885	43%	N/A	$-0.14	137	190
California	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	136	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	349	15	$201	100%	N/A	$0.07	0.00	0.00
California	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,894	15	$-3848.8338	43%	N/A	$-0.15	3	3
California	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	687	15	$625	50%	94%	$0.10	387	387

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,062	15	$7,600	15%	68%	$0.34	238	238
California	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	687	15	$875	45%	98%	$0.15	336	336
California	Miscellaneous	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,031	10	$1,575	10%	70%	$0.22	76	76
California	Miscellaneous	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	687	5	$444	95%	72%	$0.15	494	494
California	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,718	15	$5,208	50%	94%	$0.35	789	789
California	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	687	15	$437	75%	76%	$0.06	336	336
California	Miscellaneous	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	171	18	$600	45%	65%	$0.30	41	41
California	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	309	12	$5,450	1.0%	75%	$1.86	1	1
California	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	687	40	$25,325	2.0%	**%	$3.20	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	343	12	$33	10%	39%	$0.01	10	10
California	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	8	25	$1,700	45%	61%	$0.69	1	1
California	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$250	25%	85%	.	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	330	20	$511	45%	62%	$0.13	73	73
California	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,072	15%	80%	.	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	15	25	$277	15%	90%	$0.21	1	1
California	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,475	10%	73%	.	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$408	10%	85%	.	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	859	7	$492	90%	85%	$0.09	523	523
California	Miscellaneous	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	233	10	$293	35%	68%	$0.18	39	39
California	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,002	25	$5	15%	90%	$0.00	96	96
California	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,123	25	$43	15%	72%	$0.00	84	84
California	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	424	15	$333	50%	94%	$0.09	6	6
California	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	424	15	$875	45%	98%	$0.24	5	5
California	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,061	15	$5,208	50%	94%	$0.56	13	13
California	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	424	15	$437	75%	76%	$0.10	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	191	12	$5,450	1.0%	75%	$3.10	0.03	0.03
California	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	424	40	$25,325	2.0%	**%	$5.18	0.00	0.00
California	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	9	25	$277	35%	90%	$0.39	0.03	0.03
California	Miscellaneous	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	424	15	$2,500	10%	75%	$0.56	0.69	0.69
California	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	619	25	$5	80%	90%	$0.00	6	6
California	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	851	15	$875	45%	98%	$0.12	0.00	0.00
California	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	851	15	$437	75%	76%	$0.05	0.00	0.00
California	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	382	12	$5,450	1.0%	75%	$1.56	0.00	0.00
California	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	851	40	$25,325	2.0%	**%	$2.58	0.00	0.00
California	Miscellaneous	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	425	12	$33	10%	39%	$0.01	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	9	25	$1,700	45%	61%	$0.69	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$250	25%	85%	.	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,072	15%	80%	.	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	18	25	$277	15%	90%	$0.21	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,475	10%	73%	.	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$408	10%	85%	.	0.00	0.00
California	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	748	9	$203	5.0%	N/A	$0.04	0.00	0.00
California	Miscellaneous	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	233	10	$293	35%	68%	$0.18	0.00	0.00
California	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,240	25	$5	15%	90%	$0.00	0.00	0.00
California	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,391	25	$43	15%	72%	$0.00	0.00	0.00
California	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	540	15	$875	45%	98%	$0.19	0.00	0.00
California	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	540	15	$437	75%	76%	$0.08	0.00	0.00
California	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	243	12	$5,450	1.0%	75%	$2.52	0.00	0.00
California	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	540	40	$25,325	2.0%	**%	$4.07	0.00	0.00
California	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	12	25	$277	35%	90%	$0.38	0.00	0.00
California	Miscellaneous	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	540	15	$2,500	10%	75%	$0.46	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	476	9	$162	5.0%	N/A	$0.05	0.00	0.00
California	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	788	25	$5	80%	90%	$0.00	0.00	0.00
California	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	20	6	$0.44	100%	N/A	$0.00	63	63
California	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	20	6	$0.44	100%	N/A	$0.00	1	1
California	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	21	4	$23	100%	N/A	$0.31	3	3
California	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	21	4	$23	100%	N/A	$0.31	0.68	0.68
California	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
California	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.09	100%	N/A	$0.00	0.00	0.11
California	Miscellaneous	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	23	20	$3	8.8%	100%	$0.02	6	6
California	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
California	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.09	100%	N/A	$0.00	0.00	0.01
California	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	482	15	$938	100%	N/A	$0.22	0.00	0.00
California	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,244	15	$1,876	100%	N/A	$0.17	43	53
California	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	878	15	$625	50%	94%	$0.08	28	28
California	Miscellaneous	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	4,044	15	$7,600	15%	68%	$0.21	27	27
California	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	878	15	$875	45%	98%	$0.11	25	25
California	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,348	15	$437	75%	76%	$0.04	48	48
California	Miscellaneous	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	337	18	$600	45%	65%	$0.19	5	5
California	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	705	14	$4,300	5.0%	94%	$0.72	1	1
California	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	606	12	$5,450	1.0%	75%	$1.17	0.26	0.26
California	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	878	40	$25,325	2.0%	**%	$2.51	0.00	0.00
California	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,380	30	$55,636	5.0%	N/A	$1.52	3	5

Table C-2.2. Commercial Measure Details

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California	Miscellaneous	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,011	12	$33	10%	39%	$0.00	2	2
California	Miscellaneous	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	826	25	$1,700	45%	61%	$0.20	13	13
California	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	91	25	$250	25%	85%	$0.27	1	1
California	Miscellaneous	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	647	20	$511	45%	62%	$0.08	10	10
California	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	953	25	$2,072	15%	80%	$0.21	6	6
California	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	355	25	$277	15%	90%	$0.08	2	2
California	Miscellaneous	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,475	10%	73%	.	0.00	0.00
California	Miscellaneous	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$408	10%	85%	.	0.00	0.00
California	Miscellaneous	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,685	7	$492	90%	85%	$0.05	72	72
California	Miscellaneous	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	233	10	$293	35%	68%	$0.18	2	2
California	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,965	25	$5	15%	90%	$0.00	13	13
California	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,203	25	$43	15%	72%	$0.00	11	11
California	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	295	15	$750	100%	N/A	$0.29	0.00	0.00
California	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	716	15	$1,501	100%	N/A	$0.24	0.97	0.98
California	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	483	15	$333	50%	94%	$0.08	0.39	0.39
California	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	483	15	$875	45%	98%	$0.21	0.34	0.34
California	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	741	15	$437	75%	76%	$0.07	0.69	0.69
California	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	387	14	$4,300	5.0%	94%	$1.32	0.02	0.02
California	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	333	12	$5,450	1.0%	75%	$2.12	0.00	0.00
California	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	483	40	$25,325	2.0%	**%	$4.55	0.00	0.00
California	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,099	30	$28,579	5.0%	N/A	$1.26	0.07	0.07
California	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	50	25	$250	75%	85%	$0.48	0.02	0.02
California	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	195	25	$277	35%	90%	$0.14	0.04	0.04
California	Miscellaneous	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	741	15	$2,500	10%	75%	$0.39	0.08	0.08

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California	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,081	25	$5	80%	90%	$0.00	0.80	0.81
California	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	234	8	$65	5.0%	95%	$0.05	40	40
California	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	666	8	$340	75%	70%	$0.08	1,260	1,260
California	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	553	15	$747	62%	90%	$0.15	1,112	1,112
California	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	279	8	$457	90%	50%	$0.27	356	356
California	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$56	75%	95%	$0.18	97	97
California	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,277	17	$1,547	5.0%	95%	$0.07	389	389
California	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	234	8	$65	5.0%	95%	$0.05	1	1
California	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	666	8	$340	75%	70%	$0.08	33	33
California	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	553	15	$747	62%	90%	$0.15	27	27
California	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	279	8	$457	90%	50%	$0.27	9	9
California	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$56	75%	95%	$0.18	2	2
California	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,277	17	$1,547	5.0%	95%	$0.07	7	7
California	Miscellaneous	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	130	10	$208	5.0%	95%	$0.23	18	18
California	Miscellaneous	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,308	8	$2,500	20%	84%	$0.32	653	653
California	Miscellaneous	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	981	8	$1,875	20%	84%	$0.32	236	236
California	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	81	6	$30	10%	80%	$0.08	19	19
California	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	49	6	$25	5.0%	80%	$0.10	5	5
California	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	387	13	$544	100%	N/A	$0.17	710	744
California	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	310	13	$166	100%	N/A	$0.07	0.00	0.00
California	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	755	13	$5,290	25%	N/A	$0.87	461	483
California	Miscellaneous	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	595	8	$457	75%	50%	$0.13	636	636
California	Miscellaneous	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	432	15	$197	100%	N/A	$0.05	0.00	0.00

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California	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	531	15	$857	95%	N/A	$0.18	577	589
California	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	473	20	$6,290	50%	N/A	$1.32	15	15
California	Miscellaneous	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	302	13	$-7.1714893	25%	N/A	$-0.00	0.00	0.00
California	Miscellaneous	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	152	15	$3,982	100%	N/A	$3.00	0.00	0.00
California	Miscellaneous	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	199	8	$457	75%	50%	$0.38	254	254
California	Miscellaneous	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	173	11	$67	95%	50%	$0.05	297	297
California	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	34	13	$29	95%	98%	$0.11	116	116
California	Miscellaneous	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	159	10	$208	5.0%	95%	$0.19	0.62	0.62
California	Miscellaneous	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,001	8	$2,500	20%	84%	$0.41	14	14
California	Miscellaneous	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	750	8	$1,875	20%	84%	$0.41	0.00	0.00
California	Miscellaneous	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	62	6	$15	10%	80%	$0.05	0.44	0.44
California	Miscellaneous	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	28	6	$11	10%	80%	$0.08	0.20	0.20
California	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	34	13	$29	95%	98%	$0.11	2	2
California	Miscellaneous	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	878	13	$2,450	100%	N/A	$0.35	77	78
California	Miscellaneous	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	726	8	$457	75%	50%	$0.10	23	23
California	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,553	4	$30	85%	N/A	$0.00	0.00	753
California	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,234	1	$20	100%	N/A	$0.00	0.00	0.00
California	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	610	1	$15	100%	N/A	$0.00	0.00	0.00
California	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,574	12	$377	15%	N/A	$0.02	66	622

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	171	8	$457	75%	50%	$0.44	77	77
California	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.41	10%	90%	$0.05	0.49	0.49
California	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	31	4	$0.00	10%	45%	$0.00	5	5
California	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	52	52
California	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	5	4	$0.37	5.0%	86%	$0.02	0.80	0.80
California	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	50	4	$10	60%	90%	$0.06	97	97
California	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.41	10%	90%	$0.05	0.01	0.01
California	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	31	4	$0.00	10%	45%	$0.00	0.14	0.14
California	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	1	1
California	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	5	4	$0.37	5.0%	86%	$0.02	0.02	0.02
California	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	50	4	$10	60%	90%	$0.06	2	2
California	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	64	6	$70	100%	N/A	$0.22	6	6
California	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	64	6	$70	100%	N/A	$0.22	0.28	0.28
California	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	44	6	$5	100%	N/A	$0.02	14	14
California	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	44	6	$5	100%	N/A	$0.02	0.00	0.00
California	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	157	15	$38	2.5%	77%	$0.03	1	1
California	Miscellaneous	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	109	15	$11	2.5%	95%	$0.01	1	1
California	Miscellaneous	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	8	15	$5	2.5%	95%	$0.08	0.07	0.07
California	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	106	10	$88	1.0%	80%	$0.12	0.33	0.33
California	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	145	10	$120	1.0%	80%	$0.12	0.45	0.45
California	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	15	8	$1	2.5%	95%	$0.02	0.14	0.14
California	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	39	5	$6	5.0%	85%	$0.04	0.65	0.65
California	Miscellaneous	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	59	13	$8	2.5%	90%	$0.02	0.53	0.53
California	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	307	15	$76	1.0%	98%	$0.03	1	1
California	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	3	10	$0.56	1.0%	85%	$0.03	0.01	0.01
California	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	15	15	$17	2.5%	95%	$0.13	0.15	0.15
California	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	15	15	$13	2.5%	95%	$0.10	0.14	0.14

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	157	15	$38	2.5%	77%	$0.03	0.02	0.02
California	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	106	10	$88	1.0%	80%	$0.12	0.00	0.00
California	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	145	10	$120	1.0%	80%	$0.12	0.01	0.01
California	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	15	8	$1	2.5%	95%	$0.02	0.00	0.00
California	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	39	5	$6	5.0%	85%	$0.04	0.01	0.01
California	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	307	15	$76	1.0%	98%	$0.03	0.02	0.02
California	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	3	10	$0.56	1.0%	85%	$0.03	0.00	0.00
California	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	15	15	$17	2.5%	95%	$0.13	0.00	0.00
California	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	15	15	$13	2.5%	95%	$0.10	0.00	0.00
California	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	42	20	$116	100%	N/A	$0.27	0.00	0.00
California	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	48	20	$156	100%	N/A	$0.32	37	43
California	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	37	20	$9	100%	N/A	$0.02	0.00	0.00
California	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	11	20	$4	100%	N/A	$0.03	0.00	0.00
California	Miscellaneous	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	256	20	$32	8.8%	100%	$0.01	60	60
California	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	42	20	$116	100%	N/A	$0.27	0.00	0.00
California	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	48	20	$156	100%	N/A	$0.32	2	2
California	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	37	20	$9	100%	N/A	$0.02	0.00	0.00
California	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	11	20	$4	100%	N/A	$0.03	0.00	0.00
California	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	305	9	$40	100%	N/A	$0.02	862	883
California	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	1,051	4	$3,942	10%	50%	$1.04	150	150
California	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	305	9	$40	100%	N/A	$0.02	25	25
California	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	1,047	4	$3,942	10%	50%	$1.05	4	4
California	Miscellaneous	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,355	15	$7,600	15%	68%	$0.32	206	206
California	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	785	15	$437	75%	76%	$0.06	373	373
California	Miscellaneous	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	196	18	$600	45%	65%	$0.28	45	45
California	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,177	14	$4,300	5.0%	94%	$0.43	43	43
California	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	353	12	$5,450	1.0%	75%	$1.75	2	2

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	785	12	$33	10%	39%	$0.01	23	23
California	Miscellaneous	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,151	25	$1,700	45%	61%	$0.14	245	245
California	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	193	25	$250	25%	85%	$0.13	30	30
California	Miscellaneous	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	376	20	$511	45%	62%	$0.12	77	77
California	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,031	25	$2,072	15%	80%	$0.07	267	267
California	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	561	25	$277	15%	90%	$0.05	52	52
California	Miscellaneous	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,475	10%	73%	.	0.00	0.00
California	Miscellaneous	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$408	10%	85%	.	0.00	0.00
California	Miscellaneous	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	981	7	$492	90%	85%	$0.08	519	519
California	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,144	25	$5	15%	90%	$0.00	96	96
California	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,283	25	$43	15%	72%	$0.00	84	84
California	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	412	15	$437	75%	76%	$0.10	5	5
California	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	618	14	$4,300	5.0%	94%	$0.83	0.59	0.59
California	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	185	12	$5,450	1.0%	75%	$3.25	0.02	0.02
California	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	101	25	$250	75%	85%	$0.24	0.61	0.61
California	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	295	25	$277	35%	90%	$0.09	0.87	0.87
California	Miscellaneous	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	412	15	$2,500	10%	75%	$0.59	0.56	0.56
California	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	601	25	$5	80%	90%	$0.00	5	5
California	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	75	10	$10	100%	N/A	$0.02	118	118
California	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	75	10	$10	100%	N/A	$0.02	3	3
California	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	1,530	10	$306	5.0%	90%	$0.03	248	248
California	Miscellaneous	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,295	15	$7,600	15%	68%	$0.38	829	829
California	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	93	18	$200	95%	65%	$0.22	207	207
California	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	78	15	$16	95%	76%	$0.02	192	192

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,950	20	$278	55%	45%	$0.01	1,645	1,645
California	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	401	15	$912	13%	77%	$0.26	127	127
California	Miscellaneous	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	44	7	$12	65%	25%	$0.05	0.00	0.00
California	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	122	18	$1,705	5.0%	59%	$1.46	13	13
California	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	1,300	10	$306	5.0%	90%	$0.03	5	5
California	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	559	18	$1,200	95%	50%	$0.22	19	19
California	Miscellaneous	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	1,875	50	$6,250	16%	98%	$0.28	11	11
California	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	66	15	$16	95%	76%	$0.03	3	3
California	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,657	20	$278	55%	45%	$0.02	16	16
California	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	341	15	$912	13%	77%	$0.31	2	2
California	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	104	18	$1,705	5.0%	59%	$1.71	0.22	0.22
California	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	626	15	$241	75%	N/A	$0.04	0.16	10
California	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	619	15	$144	75%	N/A	$0.03	0.00	0.00
California	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	626	15	$241	75%	N/A	$0.04	0.00	0.33
California	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	619	15	$144	75%	N/A	$0.03	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.06	0.03	0.04
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.10	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.06	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	52	10	$694	55%	94%	$1.88	3	3
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.36	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.01	0.02
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.40	0.00	0.01
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.37	0.12	0.15
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	5	12	$3	1.0%	95%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$3	1.0%	94%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	210	25	$800	2.5%	100%	$0.37	0.60	0.60
California	Miscellaneous	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	0.86	0.86
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	16	9	$7	95%	25%	$0.06	0.47	0.47
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.08	22	22
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	55	10	$5	95%	73%	$0.01	4	4
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	45	10	$14	95%	62%	$0.05	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$98	75%	95%	$0.53	2	2
California	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	119	10	$88	2.5%	94%	$0.11	0.23	0.23
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.06	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.10	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.06	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$694	55%	94%	$1.90	0.06	0.06
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.36	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.40	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.37	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	5	12	$2	1.0%	95%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	94%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	208	25	$640	2.5%	100%	$0.30	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.05	95%	25%	$0.00	0.00	0.00
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.08	0.48	0.48
California	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	55	10	$5	95%	73%	$0.01	0.09	0.09
California	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$98	75%	95%	$0.54	0.04	0.04
California	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	118	10	$88	2.5%	94%	$0.11	0.00	0.00
California	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	570	15	$1,241	75%	N/A	$0.25	459	548
California	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	34	15	$54	100%	N/A	$0.18	0.00	0.00
California	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	570	15	$1,241	75%	N/A	$0.25	16	16
California	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	34	15	$54	100%	N/A	$0.18	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.06	0.44	0.52
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.10	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.06	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	53	10	$694	25%	94%	$1.84	19	19
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.36	0.00	0.07
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.22	0.25
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.40	0.00	0.21
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.37	1	1
California	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	5	12	$3	5.0%	95%	$0.07	0.35	0.41
California	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$3	5.0%	95%	$0.08	0.32	0.38
California	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	214	25	$800	2.5%	100%	$0.36	8	8
California	Miscellaneous	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	11	11
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	17	9	$7	95%	25%	$0.06	6	6
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.08	294	294
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	55	10	$5	95%	73%	$0.01	60	60
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	45	10	$14	95%	62%	$0.05	41	41
California	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$98	75%	95%	$0.52	29	29

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	122	10	$88	2.5%	94%	$0.10	3	3
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.06	0.01	0.01
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.09	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.10	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.06	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$694	25%	94%	$1.89	0.42	0.42
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.36	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.40	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.37	0.04	0.04

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	5	12	$2	5.0%	95%	$0.07	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.08	0.00	0.00
California	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	208	25	$640	2.5%	100%	$0.30	0.01	0.01
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.05	95%	25%	$0.00	0.14	0.14
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.08	7	7
California	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	55	10	$5	95%	73%	$0.01	1	1
California	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$98	75%	95%	$0.54	0.64	0.64
California	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	119	10	$88	2.5%	94%	$0.11	0.07	0.07
California	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	94	4	$10	100%	N/A	$0.03	3	3
California	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	94	4	$10	100%	N/A	$0.03	0.05	0.05
California	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	4,663	12	$786	90%	90%	$0.02	192	192
California	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	420	12	$1,097	70%	86%	$0.34	12	12
California	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	943	12	$229	95%	85%	$0.03	38	38
California	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	1,644	12	$931	40%	45%	$0.07	0.00	0.00
California	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	2,680	12	$1,713	35%	21%	$0.08	10	10
California	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	4,630	12	$2,608	39%	75%	$0.07	67	67
California	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	4,663	12	$786	90%	90%	$0.02	4	4
California	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	420	12	$1,097	70%	86%	$0.34	0.33	0.33
California	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	943	12	$229	95%	85%	$0.03	1	1
California	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	1,644	12	$931	40%	45%	$0.07	0.00	0.00
California	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	2,680	12	$1,713	35%	21%	$0.08	0.26	0.26
California	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	4,630	12	$2,608	39%	75%	$0.07	1	1
California	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	228	15	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	584	15	$317	100%	N/A	$0.06	0.00	0.00
California	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,840	15	$-6651.9035	43%	N/A	$-0.16	20	26
California	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	137	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	351	15	$254	100%	N/A	$0.08	0.00	0.00
California	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,911	15	$-4849.5306	43%	N/A	$-0.19	0.48	0.49
California	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	764	15	$612	45%	98%	$0.09	48	48
California	Restaurant	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,146	10	$1,984	10%	50%	$0.25	7	7
California	Restaurant	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	764	5	$560	95%	72%	$0.17	71	71
California	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,910	15	$3,645	50%	94%	$0.22	114	114
California	Restaurant	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	191	18	$420	45%	65%	$0.19	6	6
California	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	343	12	$5,450	65%	75%	$1.68	18	18
California	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	764	40	$17,727	2.0%	**%	$2.01	0.00	0.00
California	Restaurant	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	382	12	$71	40%	39%	$0.02	6	6
California	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	8	25	$1,190	45%	63%	$0.44	0.27	0.27
California	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$175	25%	85%	.	0.00	0.00
California	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	366	20	$357	45%	62%	$0.08	11	11
California	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$1,450	15%	72%	.	0.00	0.00
California	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	16	25	$194	15%	90%	$0.14	0.24	0.24
California	Restaurant	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,432	10%	64%	.	0.00	0.00
California	Restaurant	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$285	10%	85%	.	0.00	0.00
California	Restaurant	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	955	7	$345	90%	85%	$0.05	78	78
California	Restaurant	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	379	10	$629	35%	68%	$0.24	8	8
California	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,114	25	$12	15%	90%	$0.00	14	14
California	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,249	25	$94	15%	65%	$0.01	11	11

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California	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	427	15	$612	45%	98%	$0.16	0.64	0.64
California	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,068	15	$3,645	50%	94%	$0.39	1	1
California	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	192	12	$5,450	65%	75%	$3.04	0.30	0.30
California	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	427	40	$17,727	2.0%	**%	$3.60	0.00	0.00
California	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	9	25	$194	35%	90%	$0.26	0.00	0.00
California	Restaurant	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	427	15	$1,750	10%	75%	$0.39	0.09	0.09
California	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	622	25	$12	80%	90%	$0.00	0.91	0.91
California	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	20	6	$0.44	100%	N/A	$0.00	4	4
California	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	20	6	$0.44	100%	N/A	$0.00	0.11	0.11
California	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	12	4	$14	100%	N/A	$0.31	0.14	0.14
California	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	12	4	$14	100%	N/A	$0.31	0.02	0.02
California	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	0.90	20	$0.13	100%	N/A	$0.01	0.00	0.00
California	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.06	100%	N/A	$0.00	0.00	0.00
California	Restaurant	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	16	20	$2	8.8%	100%	$0.02	0.28	0.28
California	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	0.90	20	$0.13	100%	N/A	$0.01	0.00	0.00
California	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.06	100%	N/A	$0.00	0.00	0.00
California	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	508	15	$1,182	100%	N/A	$0.27	0.00	0.00
California	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,261	15	$2,364	100%	N/A	$0.21	0.00	0.00
California	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	929	15	$612	45%	98%	$0.08	0.00	0.00
California	Restaurant	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	349	18	$420	45%	65%	$0.13	0.00	0.00
California	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	703	14	$3,010	5.0%	94%	$0.51	0.00	0.00
California	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	629	12	$5,450	65%	75%	$1.12	0.00	0.00
California	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	929	40	$17,727	2.0%	**%	$1.66	0.00	0.00

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California	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,594	30	$70,101	5.0%	N/A	$1.80	0.00	0.00
California	Restaurant	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,049	12	$71	40%	39%	$0.01	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	826	25	$1,190	45%	63%	$0.14	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	90	25	$175	25%	85%	$0.19	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	671	20	$357	45%	62%	$0.05	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	563	25	$1,450	15%	72%	$0.25	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	355	25	$194	15%	90%	$0.05	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,432	10%	64%	.	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$285	10%	85%	.	0.00	0.00
California	Restaurant	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,748	7	$345	90%	85%	$0.04	0.00	0.00
California	Restaurant	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	379	10	$629	35%	68%	$0.24	0.00	0.00
California	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,039	25	$12	15%	90%	$0.00	0.00	0.00
California	Restaurant	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,286	25	$94	15%	65%	$0.00	0.00	0.00
California	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	295	15	$945	100%	N/A	$0.37	0.00	0.00
California	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	722	15	$1,891	100%	N/A	$0.30	0.00	0.00
California	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	494	15	$612	45%	98%	$0.14	0.00	0.00
California	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	374	14	$3,010	5.0%	94%	$0.95	0.00	0.00
California	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	334	12	$5,450	65%	75%	$2.11	0.00	0.00
California	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	494	40	$17,727	2.0%	**%	$3.11	0.00	0.00
California	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,092	30	$36,010	5.0%	N/A	$1.59	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	48	25	$175	75%	85%	$0.35	0.00	0.00
California	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	189	25	$194	35%	90%	$0.10	0.00	0.00
California	Restaurant	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	744	15	$1,750	10%	75%	$0.27	0.00	0.00
California	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,085	25	$12	80%	90%	$0.00	0.00	0.00

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California	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	163	8	$45	5.0%	95%	$0.05	1	1
California	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	895	8	$284	75%	70%	$0.05	111	111
California	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	743	15	$1,004	62%	90%	$0.15	97	97
California	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	375	8	$320	45%	55%	$0.14	17	17
California	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	33	13	$49	75%	95%	$0.18	5	5
California	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	1,594	17	$1,083	5.0%	95%	$0.07	17	17
California	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	163	8	$45	5.0%	95%	$0.05	0.04	0.04
California	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	895	8	$284	75%	70%	$0.05	2	2
California	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	743	15	$1,004	62%	90%	$0.15	2	2
California	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	375	8	$320	45%	55%	$0.14	0.46	0.46
California	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	33	13	$49	75%	95%	$0.18	0.14	0.14
California	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	1,594	17	$1,083	5.0%	95%	$0.07	0.33	0.33
California	Restaurant	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	129	10	$145	0.5%	95%	$0.16	0.12	0.12
California	Restaurant	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,551	8	$1,750	5.0%	98%	$0.19	15	15
California	Restaurant	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,163	8	$1,312	5.0%	98%	$0.19	11	11
California	Restaurant	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	637	6	$236	25%	80%	$0.08	25	25
California	Restaurant	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	391	6	$198	25%	80%	$0.10	15	15
California	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	325	13	$134	100%	N/A	$0.05	0.00	0.00
California	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	506	13	$427	100%	N/A	$0.10	62	64
California	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	888	13	$3,789	25%	N/A	$0.53	36	37
California	Restaurant	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	590	8	$320	5.0%	55%	$0.09	3	3
California	Restaurant	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	87	15	$30	100%	N/A	$0.04	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Restaurant	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	107	15	$134	95%	N/A	$0.14	7	7
California	Restaurant	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	95	16	$991	50%	N/A	$1.14	0.30	0.30
California	Restaurant	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	61	10	$-1.6184927	25%	N/A	$-0.00	0.00	0.00
California	Restaurant	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	30	15	$627	100%	N/A	$2.33	0.00	0.00
California	Restaurant	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	39	8	$320	5.0%	55%	$1.33	0.24	0.24
California	Restaurant	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	306	11	$119	95%	50%	$0.05	34	34
California	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	61	13	$52	95%	98%	$0.11	13	13
California	Restaurant	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	202	10	$145	0.5%	95%	$0.10	0.00	0.00
California	Restaurant	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,240	8	$1,750	5.0%	98%	$0.23	0.32	0.32
California	Restaurant	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	930	8	$1,312	5.0%	98%	$0.23	0.24	0.24
California	Restaurant	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	493	6	$120	25%	80%	$0.05	0.53	0.53
California	Restaurant	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	222	6	$86	25%	80%	$0.08	0.24	0.24
California	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	61	13	$52	95%	98%	$0.11	0.29	0.29
California	Restaurant	Lighting Interior Other	Lighting Package, High Efficiency	16% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,617	13	$2,544	100%	N/A	$0.19	9	9
California	Restaurant	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	920	8	$320	5.0%	55%	$0.06	0.13	0.13
California	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	12,354	4	$115	85%	N/A	$0.00	0.00	126
California	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	10,807	1	$76	100%	N/A	$0.00	0.00	0.00
California	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,883	1	$59	100%	N/A	$0.00	0.00	0.00
California	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	12,456	12	$1,429	15%	N/A	$0.01	21	162

Table C-2.2. Commercial Measure Details

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California	Restaurant	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	724	8	$320	5.0%	55%	$0.07	1	1
California	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.49	10%	90%	$0.05	0.03	0.03
California	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	31	4	$0.00	10%	45%	$0.00	0.33	0.33
California	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	71	10	$0.35	95%	75%	$0.00	12	12
California	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	704	10	$498	95%	86%	$0.10	135	135
California	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$0.26	5.0%	86%	$0.01	0.06	0.06
California	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	35	4	$7	60%	90%	$0.06	4	4
California	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.49	10%	90%	$0.05	0.00	0.00
California	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	31	4	$0.00	10%	45%	$0.00	0.00	0.00
California	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	71	10	$0.35	95%	75%	$0.00	0.31	0.31
California	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	704	10	$498	95%	86%	$0.10	3	3
California	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$0.26	5.0%	86%	$0.01	0.00	0.00
California	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	35	4	$7	60%	90%	$0.06	0.12	0.12
California	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	63	6	$69	100%	N/A	$0.22	0.43	0.43
California	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	63	6	$69	100%	N/A	$0.22	0.01	0.01
California	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	31	6	$3	100%	N/A	$0.02	0.66	0.66
California	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	31	6	$3	100%	N/A	$0.02	0.00	0.00
California	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	747	8	$64	25%	45%	$0.01	15	15
California	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	1,240	15	$301	10%	77%	$0.03	17	17
California	Restaurant	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	856	15	$92	10%	95%	$0.01	14	14
California	Restaurant	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	63	15	$41	10%	95%	$0.08	1	1
California	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	838	10	$695	10%	80%	$0.12	12	12
California	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,138	10	$943	10%	80%	$0.12	16	16
California	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	220	10	$3,300	5.0%	68%	$2.13	1	1
California	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	123	8	$12	1.0%	95%	$0.02	0.21	0.21
California	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	208	12	$197	95%	77%	$0.12	27	27
California	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	308	5	$49	30%	85%	$0.04	13	13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	1,039	3	$163	10%	85%	$0.06	15	15
California	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	164	12	$-38.521119	95%	81%	$-0.03	22	22
California	Restaurant	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	469	13	$67	10%	90%	$0.02	7	7
California	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	298	4	$215	5.0%	20%	$0.20	0.51	0.51
California	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	23	10	$4	2.5%	85%	$0.03	0.09	0.09
California	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	125	15	$138	35%	95%	$0.13	7	7
California	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	169	15	$152	35%	95%	$0.10	9	9
California	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	747	8	$64	25%	45%	$0.01	0.41	0.41
California	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	1,240	15	$301	10%	77%	$0.03	0.40	0.40
California	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	838	10	$695	10%	80%	$0.12	0.31	0.31
California	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	1,138	10	$943	10%	80%	$0.12	0.42	0.42
California	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	220	10	$3,300	5.0%	68%	$2.13	0.03	0.03
California	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	123	8	$12	1.0%	95%	$0.02	0.00	0.00
California	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	208	12	$197	95%	77%	$0.12	0.72	0.72
California	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	308	5	$49	30%	85%	$0.04	0.38	0.38
California	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	519	3	$63	5.0%	90%	$0.04	0.11	0.11
California	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	164	12	$-38.521119	95%	81%	$-0.03	0.60	0.60
California	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	298	4	$215	5.0%	20%	$0.20	0.01	0.01
California	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	23	10	$4	2.5%	85%	$0.03	0.00	0.00
California	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	125	15	$138	35%	95%	$0.13	0.17	0.17
California	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	169	15	$152	35%	95%	$0.10	0.22	0.22
California	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	30	20	$82	100%	N/A	$0.27	0.00	0.00
California	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	34	20	$110	100%	N/A	$0.32	1	2
California	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$6	100%	N/A	$0.02	0.00	0.00
California	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	8	20	$2	100%	N/A	$0.03	0.00	0.00
California	Restaurant	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	181	20	$23	8.8%	100%	$0.01	2	2

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California	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	30	20	$82	100%	N/A	$0.27	0.00	0.00
California	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	34	20	$110	100%	N/A	$0.32	0.09	0.10
California	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$6	100%	N/A	$0.02	0.00	0.00
California	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	8	20	$2	100%	N/A	$0.03	0.00	0.00
California	Restaurant	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	171	18	$420	45%	65%	$0.18	5	5
California	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,031	14	$3,010	5.0%	94%	$0.35	5	5
California	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	309	12	$5,450	65%	75%	$1.58	16	16
California	Restaurant	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	687	12	$71	40%	39%	$0.01	11	11
California	Restaurant	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,008	25	$1,190	45%	63%	$0.11	29	29
California	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	169	25	$175	25%	85%	$0.10	3	3
California	Restaurant	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	330	20	$357	45%	62%	$0.07	9	9
California	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,774	25	$1,450	15%	72%	$0.08	18	18
California	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	491	25	$194	15%	90%	$0.04	6	6
California	Restaurant	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,432	10%	64%	.	0.00	0.00
California	Restaurant	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$285	10%	85%	.	0.00	0.00
California	Restaurant	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	859	7	$345	90%	85%	$0.05	61	61
California	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,002	25	$12	15%	90%	$0.00	11	11
California	Restaurant	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,124	25	$94	15%	65%	$0.01	9	9
California	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	538	14	$3,010	5.0%	94%	$0.66	0.06	0.06
California	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	161	12	$5,450	65%	75%	$2.97	0.22	0.22
California	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	88	25	$175	75%	85%	$0.19	0.07	0.07
California	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	256	25	$194	35%	90%	$0.07	0.09	0.09
California	Restaurant	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	358	15	$1,750	10%	75%	$0.38	0.06	0.06
California	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	522	25	$12	80%	90%	$0.00	0.64	0.64
California	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,865	18	$6,250	95%	25%	$0.35	104	104
California	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	80	15	$11	95%	76%	$0.02	12	12
California	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,012	20	$194	55%	45%	$0.01	110	110

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Restaurant	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	30	7	$8	65%	25%	$0.05	0.00	0.00
California	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,865	18	$6,250	95%	25%	$0.35	2	2
California	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	73	15	$11	95%	76%	$0.02	0.29	0.29
California	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,843	20	$194	55%	45%	$0.01	1	1
California	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,378	15	$403	75%	N/A	$0.01	0.09	8
California	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,287	15	$240	75%	N/A	$0.00	0.00	0.00
California	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,378	15	$403	75%	N/A	$0.01	0.00	0.25
California	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,287	15	$240	75%	N/A	$0.00	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	702	10	$486	75%	94%	$0.10	3	3
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	20%	35%	$0.36	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	20%	35%	$0.08	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	20%	55%	$0.40	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	20%	55%	$0.37	0.01	0.02
California	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	75%	95%	$0.07	13	17
California	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,666	12	$1,654	75%	94%	$0.08	12	15
California	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,811	25	$1,000	2.5%	100%	$0.03	0.34	0.34
California	Restaurant	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	140	12	$31	80%	90%	$0.03	0.49	0.49
California	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	223	9	$12	95%	25%	$0.01	0.38	0.38
California	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.08	1	1

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California	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	351	10	$171	75%	95%	$0.07	1	1
California	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,602	10	$695	45%	94%	$0.06	3	3
California	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	696	10	$486	75%	94%	$0.10	0.07	0.07
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	20%	35%	$0.36	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	20%	35%	$0.08	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	20%	55%	$0.40	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	20%	55%	$0.37	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	75%	95%	$0.07	0.29	0.29
California	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	75%	94%	$0.08	0.26	0.26
California	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,786	25	$800	2.5%	100%	$0.03	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	221	9	$0.08	95%	25%	$0.00	0.00	0.00
California	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.08	0.02	0.02
California	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	348	10	$171	75%	95%	$0.07	0.03	0.03
California	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,588	10	$695	45%	94%	$0.06	0.06	0.06
California	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,631	15	$2,069	75%	N/A	$0.03	328	430
California	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	457	15	$90	100%	N/A	$0.02	0.00	0.00
California	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,631	15	$2,069	75%	N/A	$0.03	10	11
California	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	457	15	$90	100%	N/A	$0.02	0.00	0.00

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California	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	718	10	$486	75%	94%	$0.10	48	48
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	75%	35%	$0.36	0.00	0.04
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	75%	35%	$0.08	0.11	0.13
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	75%	55%	$0.40	0.00	0.11
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	75%	55%	$0.37	0.86	0.99
California	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	85%	95%	$0.07	203	238
California	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,666	12	$1,654	85%	95%	$0.08	186	218
California	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,874	25	$1,000	2.5%	100%	$0.03	4	4
California	Restaurant	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	143	12	$31	80%	90%	$0.03	6	6
California	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	228	9	$12	95%	25%	$0.01	5	5
California	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.08	17	17
California	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	359	10	$171	75%	95%	$0.07	24	24
California	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,638	10	$695	25%	94%	$0.06	22	22
California	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	698	10	$486	75%	94%	$0.10	1	1
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	75%	35%	$0.36	0.00	0.00
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	75%	35%	$0.08	0.00	0.00
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	75%	55%	$0.40	0.00	0.00
California	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	75%	55%	$0.37	0.02	0.02

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California	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	85%	95%	$0.07	4	4
California	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	85%	95%	$0.08	4	4
California	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,794	25	$800	2.5%	100%	$0.03	0.01	0.01
California	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	222	9	$0.08	95%	25%	$0.00	0.11	0.11
California	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.08	0.41	0.41
California	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	349	10	$171	75%	95%	$0.07	0.53	0.53
California	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,592	10	$695	25%	94%	$0.06	0.49	0.49
California	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	3,974	4	$454	100%	N/A	$0.03	42	49
California	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	6,131	4	$454	95%	30%	$0.02	115	115
California	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	3,974	4	$454	100%	N/A	$0.03	0.59	0.60
California	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	6,131	4	$454	95%	30%	$0.02	3	3
California	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	104	12	$17	90%	90%	$0.02	1	1
California	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	9	12	$24	35%	90%	$0.34	0.03	0.03
California	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	32	12	$7	95%	85%	$0.03	0.34	0.34
California	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	56	12	$32	26%	40%	$0.07	0.00	0.00
California	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	92	12	$59	75%	21%	$0.08	0.19	0.19
California	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	159	12	$89	14%	75%	$0.07	0.21	0.21
California	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	104	12	$17	90%	90%	$0.02	0.02	0.02
California	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	9	12	$24	35%	90%	$0.34	0.00	0.00
California	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	32	12	$7	95%	85%	$0.03	0.00	0.00
California	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	56	12	$32	26%	40%	$0.07	0.00	0.00
California	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	92	12	$59	75%	21%	$0.08	0.00	0.00
California	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	159	12	$89	14%	75%	$0.07	0.00	0.00

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California	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,439	15	$4,871	25%	94%	$0.39	4	4
California	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	179	5	$3,319	95%	81%	$4.29	1	1
California	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,088	10	$20,432	25%	70%	$2.67	2	2
California	School	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	719	15	$47,438	45%	90%	$7.54	3	3
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	3,251	20	$8,420	100%	N/A	$0.26	15	21
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	541	20	$1,403	100%	N/A	$0.26	0.00	0.00
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,986	20	$5,146	100%	N/A	$0.26	0.00	0.00
California	School	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	4,318	15	$59,235	15%	68%	$0.09	5	5
California	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,439	15	$6,819	65%	98%	$0.54	11	11
California	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,151	7	$2,525	10%	94%	$0.40	1	1
California	School	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	2,015	15	$226	65%	35%	$0.01	5	5
California	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	575	13	$1,828	75%	65%	$0.39	3	3
California	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,439	15	$3,409	75%	76%	$0.02	9	9
California	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	647	12	$5,450	25%	75%	$0.06	1	1
California	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,439	40	$97,388	2.0%	**%	$11.91	0.00	0.00
California	School	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	719	12	$513	10%	39%	$0.00	0.28	0.28
California	School	Cooling Chillers	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	82	25	$13,250	45%	67%	$0.02	0.25	0.25
California	School	Cooling Chillers	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,948	25%	85%	.	0.00	0.00
California	School	Cooling Chillers	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$16,151	15%	83%	.	0.00	0.00
California	School	Cooling Chillers	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	0.00	25	$2,165	15%	90%	.	0.00	0.00
California	School	Cooling Chillers	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$27,084	10%	74%	.	0.00	0.00
California	School	Cooling Chillers	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$3,182	10%	85%	.	0.00	0.00
California	School	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (CA State Code)	No Insulation	Per Building	Existing	215	15	$400	65%	45%	$0.21	0.64	0.64
California	School	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,799	7	$3,841	90%	85%	$0.02	14	14

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	5,233	10	$4,529	35%	68%	$0.12	11	11
California	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,098	25	$89	15%	90%	$0.00	2	2
California	School	Cooling Chillers	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,353	25	$677	15%	75%	$0.00	2	2
California	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	953	15	$2,598	25%	94%	$0.31	0.07	0.07
California	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	119	5	$3,319	95%	81%	$6.48	0.03	0.03
California	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	720	10	$18,389	25%	70%	$3.63	0.04	0.04
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	2,534	20	$7,578	100%	N/A	$0.30	0.54	0.55
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	422	20	$1,263	100%	N/A	$0.30	0.00	0.00
California	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	1,548	20	$4,631	100%	N/A	$0.30	0.00	0.00
California	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	953	15	$6,819	65%	98%	$0.82	0.18	0.18
California	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	762	7	$2,273	10%	94%	$0.54	0.02	0.02
California	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	381	13	$1,645	75%	65%	$0.53	0.05	0.05
California	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	953	15	$3,409	75%	76%	$0.03	0.15	0.15
California	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	428	12	$5,450	25%	75%	$0.10	0.02	0.02
California	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	953	40	$97,388	2.0%	**%	$17.99	0.00	0.00
California	School	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	953	15	$19,485	10%	75%	$0.14	0.01	0.01
California	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,389	25	$89	80%	90%	$0.00	0.18	0.18
California	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	956	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	1,833	15	$2,067	100%	N/A	$0.13	0.00	0.00
California	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	12,318	15	$-44427.158	43%	N/A	$-0.41	8	12
California	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	723	15	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	1,386	15	$1,653	100%	N/A	$0.14	0.00	0.00
California	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	9,315	15	$-33190.302	43%	N/A	$-0.41	0.27	0.27
California	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,894	15	$4,871	25%	94%	$0.29	12	12
California	School	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,683	15	$59,235	15%	68%	$0.09	15	15
California	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,894	15	$6,819	65%	98%	$0.41	31	31
California	School	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,841	10	$14,731	10%	60%	$0.74	4	4
California	School	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,894	5	$4,156	95%	72%	$0.51	31	31
California	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	4,736	15	$40,594	50%	94%	$0.98	49	49
California	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,894	15	$3,409	75%	76%	$0.01	21	21
California	School	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	473	18	$4,676	45%	65%	$0.07	2	2
California	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	852	12	$5,450	25%	75%	$0.06	2	2
California	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,894	40	$97,388	2.0%	**%	$9.05	0.00	0.00
California	School	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	947	12	$513	10%	39%	$0.00	0.67	0.67
California	School	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	22	25	$13,250	45%	67%	$0.02	0.12	0.12
California	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,948	25%	85%	.	0.00	0.00
California	School	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	909	20	$3,984	45%	62%	$0.03	4	4
California	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$16,151	15%	83%	.	0.00	0.00
California	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	42	25	$2,165	15%	90%	$0.01	0.10	0.10
California	School	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$27,084	10%	74%	.	0.00	0.00
California	School	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$3,182	10%	85%	.	0.00	0.00
California	School	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,368	7	$3,841	90%	85%	$0.02	32	32
California	School	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	5,233	10	$4,529	35%	68%	$0.12	20	20
California	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,761	25	$89	15%	90%	$0.00	5	5
California	School	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,096	25	$677	15%	75%	$0.00	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,341	15	$2,598	25%	94%	$0.22	0.21	0.21
California	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,341	15	$6,819	65%	98%	$0.58	0.54	0.54
California	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	3,354	15	$40,594	50%	94%	$1.38	0.93	0.93
California	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,341	15	$3,409	75%	76%	$0.02	0.42	0.42
California	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	603	12	$5,450	25%	75%	$0.10	0.06	0.06
California	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,341	40	$97,388	2.0%	**%	$12.78	0.00	0.00
California	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	29	25	$2,165	35%	90%	$0.02	0.00	0.00
California	School	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,341	15	$19,485	10%	75%	$0.14	0.04	0.04
California	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,956	25	$89	80%	90%	$0.00	0.49	0.49
California	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	140	6	$3	100%	N/A	$0.00	9	9
California	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	140	6	$3	100%	N/A	$0.00	0.26	0.26
California	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	537	4	$605	100%	N/A	$0.31	2	2
California	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	537	4	$605	100%	N/A	$0.31	0.38	0.38
California	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	9	20	$1	100%	N/A	$0.01	0.00	0.00
California	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	24	20	$0.65	100%	N/A	$0.00	0.00	0.01
California	School	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	166	20	$25	8.8%	100%	$0.02	0.94	0.94
California	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	9	20	$1	100%	N/A	$0.01	0.00	0.00
California	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	24	20	$0.65	100%	N/A	$0.00	0.00	0.00
California	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	8,523	15	$8,449	100%	N/A	$0.11	0.00	0.00
California	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,602	15	$4,871	25%	94%	$0.21	0.00	0.00
California	School	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	43,837	15	$59,235	15%	68%	$0.15	0.00	0.00
California	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,602	15	$6,819	65%	98%	$0.30	0.00	0.00
California	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	14,612	15	$3,409	75%	76%	$0.03	0.00	0.00
California	School	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	3,653	18	$4,676	45%	65%	$0.13	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	18,014	14	$17,673	5.0%	94%	$0.12	0.00	0.00
California	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	6,575	12	$5,450	25%	75%	$0.11	0.00	0.00
California	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,602	40	$97,388	2.0%	**%	$6.59	0.00	0.00
California	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	30,882	30	$23,387	5.0%	N/A	$1.56	0.00	0.00
California	School	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	10,959	12	$513	10%	39%	$0.01	0.00	0.00
California	School	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	25,928	25	$13,250	45%	67%	$0.05	0.00	0.00
California	School	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	2,559	25	$1,948	25%	85%	$0.07	0.00	0.00
California	School	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	7,014	20	$3,984	45%	62%	$0.06	0.00	0.00
California	School	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	21,826	25	$16,151	15%	83%	$0.07	0.00	0.00
California	School	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	8,636	25	$2,165	15%	90%	$0.02	0.00	0.00
California	School	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$27,084	10%	74%	.	0.00	0.00
California	School	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$3,182	10%	85%	.	0.00	0.00
California	School	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	18,265	7	$3,841	90%	85%	$0.04	0.00	0.00
California	School	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	5,233	10	$4,529	35%	68%	$0.12	0.00	0.00
California	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	21,300	25	$89	15%	90%	$0.00	0.00	0.00
California	School	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	23,885	25	$677	15%	75%	$0.00	0.00	0.00
California	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	5,288	15	$6,759	100%	N/A	$0.15	0.00	0.00
California	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,486	15	$2,598	25%	94%	$0.20	0.00	0.00
California	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,486	15	$6,819	65%	98%	$0.52	0.00	0.00
California	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	8,346	15	$3,409	75%	76%	$0.05	0.00	0.00
California	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	10,289	14	$17,673	5.0%	94%	$0.20	0.00	0.00
California	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	3,755	12	$5,450	25%	75%	$0.19	0.00	0.00
California	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,486	40	$97,388	2.0%	**%	$11.53	0.00	0.00

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California	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	19,417	30	$69,180	5.0%	N/A	$1.28	0.00	0.00
California	School	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	1,461	25	$1,948	75%	85%	$0.13	0.00	0.00
California	School	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	4,932	25	$2,165	35%	90%	$0.04	0.00	0.00
California	School	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	8,346	15	$19,485	10%	75%	$0.27	0.00	0.00
California	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	12,166	25	$89	80%	90%	$0.00	0.00	0.00
California	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	1,825	8	$507	5.0%	95%	$0.05	6	6
California	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,209	8	$949	75%	70%	$0.05	132	132
California	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,665	15	$3,601	62%	90%	$0.15	117	117
California	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	932	8	$3,564	90%	41%	$0.63	21	21
California	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	26	13	$39	75%	95%	$0.18	1	1
California	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	17,751	17	$12,061	5.0%	95%	$0.07	66	66
California	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	1,825	8	$507	5.0%	95%	$0.05	0.18	0.18
California	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,209	8	$949	75%	70%	$0.05	3	3
California	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,665	15	$3,601	62%	90%	$0.15	2	2
California	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	932	8	$3,564	90%	41%	$0.63	0.57	0.57
California	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	26	13	$39	75%	95%	$0.18	0.03	0.03
California	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	17,751	17	$12,061	5.0%	95%	$0.07	1	1
California	School	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,105	10	$1,622	10%	95%	$0.21	7	7
California	School	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,593	8	$11,167	30%	81%	$0.40	77	77
California	School	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,445	8	$8,375	30%	81%	$0.40	0.00	0.00
California	School	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	310	6	$115	10%	80%	$0.08	1	1
California	School	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	190	6	$96	10%	80%	$0.10	1	1
California	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,580	13	$1,769	100%	N/A	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,338	13	$6,660	100%	N/A	$0.19	180	184
California	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	8,415	13	$52,647	25%	N/A	$0.77	116	119
California	School	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,482	8	$3,564	75%	41%	$0.17	73	73
California	School	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,054	15	$788	100%	N/A	$0.09	0.00	0.00
California	School	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,300	15	$3,184	95%	N/A	$0.28	33	33
California	School	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,160	29	$22,881	50%	N/A	$1.83	1	1
California	School	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	736	19	$46	25%	N/A	$0.01	0.00	0.00
California	School	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	362	15	$14,513	100%	N/A	$4.58	0.00	0.00
California	School	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	354	8	$3,564	75%	41%	$1.67	7	7
California	School	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	172	11	$66	95%	50%	$0.05	6	6
California	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	34	13	$29	95%	98%	$0.11	2	2
California	School	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,000	10	$1,622	10%	95%	$0.23	0.18	0.18
California	School	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,601	8	$11,167	30%	81%	$0.51	1	1
California	School	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,700	8	$8,375	30%	81%	$0.51	0.00	0.00
California	School	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	240	6	$58	10%	80%	$0.05	0.03	0.03
California	School	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	108	6	$42	10%	80%	$0.08	0.01	0.01
California	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	34	13	$29	95%	98%	$0.11	0.06	0.06
California	School	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,502	13	$9,055	100%	N/A	$0.32	6	6
California	School	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,152	8	$3,564	75%	41%	$0.19	1	1

Table C-2.2. Commercial Measure Details

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California	School	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,071	4	$89	85%	N/A	$0.00	0.00	5
California	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,435	1	$58	100%	N/A	$0.00	0.00	0.00
California	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,155	1	$46	100%	N/A	$0.00	0.00	0.00
California	School	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,113	12	$1,103	15%	N/A	$0.03	2	15
California	School	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	167	8	$3,564	75%	41%	$3.53	1	1
California	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	0.80	7	$0.21	10%	90%	$0.05	0.00	0.00
California	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	217	4	$0.00	75%	45%	$0.00	5	5
California	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	1	1
California	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	621	10	$439	95%	86%	$0.10	39	39
California	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	2	4	$2	5.0%	86%	$0.30	0.00	0.00
California	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	649	4	$129	60%	90%	$0.06	27	27
California	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	0.80	7	$0.21	10%	90%	$0.05	0.00	0.00
California	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	217	4	$0.00	75%	45%	$0.00	0.15	0.15
California	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	0.02	0.02
California	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	621	10	$439	95%	86%	$0.10	1	1
California	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	2	4	$2	5.0%	86%	$0.30	0.00	0.00
California	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	649	4	$129	60%	90%	$0.06	0.76	0.76
California	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	439	6	$479	100%	N/A	$0.22	1	1
California	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	439	6	$479	100%	N/A	$0.22	0.04	0.04
California	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	818	6	$95	100%	N/A	$0.02	5	5
California	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	818	6	$95	100%	N/A	$0.02	0.00	0.00
California	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	363	8	$31	15%	45%	$0.01	0.67	0.67
California	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	603	15	$146	5.0%	77%	$0.03	0.63	0.63
California	School	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	416	15	$45	5.0%	95%	$0.01	0.54	0.54
California	School	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	31	15	$20	5.0%	95%	$0.08	0.04	0.04

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California	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	408	10	$338	25%	80%	$0.12	2	2
California	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	554	10	$459	25%	80%	$0.12	3	3
California	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	107	10	$3,300	5.0%	68%	$4.38	0.09	0.09
California	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	60	8	$5	1.0%	95%	$0.02	0.01	0.01
California	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	9	12	$8	95%	77%	$0.12	0.18	0.18
California	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	505	3	$79	10%	85%	$0.06	1	1
California	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	7	12	$-1.683709	95%	81%	$-0.03	0.15	0.15
California	School	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	228	13	$32	25%	90%	$0.02	1	1
California	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	13	4	$9	95%	20%	$0.20	0.06	0.06
California	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	11	10	$2	2.5%	85%	$0.03	0.00	0.00
California	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	60	15	$67	10%	95%	$0.13	0.15	0.15
California	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	7	15	$6	10%	95%	$0.10	0.01	0.01
California	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	363	8	$31	15%	45%	$0.01	0.01	0.01
California	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	603	15	$146	5.0%	77%	$0.03	0.01	0.01
California	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	408	10	$338	25%	80%	$0.12	0.05	0.05
California	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	554	10	$459	25%	80%	$0.12	0.07	0.07
California	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	107	10	$3,300	5.0%	68%	$4.38	0.00	0.00
California	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	60	8	$5	1.0%	95%	$0.02	0.00	0.00
California	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	9	12	$8	95%	77%	$0.12	0.00	0.00
California	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	252	3	$30	5.0%	90%	$0.04	0.00	0.00
California	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	7	12	$-1.683709	95%	81%	$-0.03	0.00	0.00
California	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	13	4	$9	95%	20%	$0.20	0.00	0.00
California	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	11	10	$2	2.5%	85%	$0.03	0.00	0.00
California	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	60	15	$67	10%	95%	$0.13	0.00	0.00
California	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	7	15	$6	10%	95%	$0.10	0.00	0.00

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California	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	303	20	$824	100%	N/A	$0.27	0.00	0.00
California	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	339	20	$1,105	100%	N/A	$0.32	5	6
California	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	266	20	$64	100%	N/A	$0.02	0.00	0.00
California	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	84	20	$29	100%	N/A	$0.03	0.00	0.00
California	School	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,813	20	$229	8.8%	100%	$0.01	9	9
California	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	303	20	$824	100%	N/A	$0.27	0.00	0.00
California	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	339	20	$1,105	100%	N/A	$0.32	0.33	0.34
California	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	266	20	$64	100%	N/A	$0.02	0.00	0.00
California	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	84	20	$29	100%	N/A	$0.03	0.00	0.00
California	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	124	9	$16	100%	N/A	$0.02	7	7
California	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	429	4	$1,611	10%	50%	$1.04	1	1
California	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	124	9	$16	100%	N/A	$0.02	0.22	0.23
California	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	428	4	$1,611	10%	50%	$1.05	0.03	0.03
California	School	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	73,070	15	$59,235	15%	68%	$0.09	75	75
California	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	24,356	15	$3,409	75%	76%	$0.02	136	136
California	School	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	6,089	18	$4,676	45%	65%	$0.08	16	16
California	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	36,535	14	$17,673	5.0%	94%	$0.06	15	15
California	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	10,960	12	$5,450	25%	75%	$0.06	18	18
California	School	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	24,356	12	$513	10%	39%	$0.00	8	8
California	School	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	52,689	25	$13,250	45%	67%	$0.02	144	144
California	School	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	6,002	25	$1,948	25%	85%	$0.03	10	10
California	School	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	11,691	20	$3,984	45%	62%	$0.03	27	27
California	School	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	62,848	25	$16,151	15%	83%	$0.02	65	65
California	School	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	17,420	25	$2,165	15%	90%	$0.01	18	18
California	School	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$27,084	10%	74%	.	0.00	0.00
California	School	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$3,182	10%	85%	.	0.00	0.00
California	School	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	30,446	7	$3,841	90%	85%	$0.02	186	186
California	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	35,503	25	$89	15%	90%	$0.00	34	34
California	School	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	39,814	25	$677	15%	75%	$0.00	31	31
California	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	14,516	15	$3,409	75%	76%	$0.03	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	21,775	14	$17,673	5.0%	94%	$0.10	0.24	0.24
California	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	6,532	12	$5,450	25%	75%	$0.10	0.30	0.30
California	School	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	3,577	25	$1,948	75%	85%	$0.05	0.25	0.25
California	School	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	10,382	25	$2,165	35%	90%	$0.02	0.35	0.35
California	School	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	14,516	15	$19,485	10%	75%	$0.15	0.23	0.23
California	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	21,160	25	$89	80%	90%	$0.00	2	2
California	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	595	10	$81	100%	N/A	$0.02	20	20
California	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	595	10	$81	100%	N/A	$0.02	0.64	0.64
California	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	10,678	10	$2,389	5.0%	90%	$0.03	37	37
California	School	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	16,017	15	$59,235	15%	68%	$0.42	126	126
California	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,700	95%	85%	$0.25	71	71
California	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	544	15	$128	95%	76%	$0.03	29	29
California	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	13,614	20	$2,169	55%	45%	$0.02	248	248
California	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	2,802	15	$7,115	11%	77%	$0.29	16	16
California	School	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	344	7	$97	65%	25%	$0.05	0.00	0.00
California	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	854	18	$1,705	65%	59%	$0.21	25	25
California	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	8,028	10	$2,389	5.0%	90%	$0.04	0.74	0.74
California	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,700	95%	85%	$0.25	1	1
California	School	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	14,614	50	$48,713	15%	98%	$0.28	1	1
California	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	409	15	$128	95%	76%	$0.04	0.52	0.52
California	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	10,235	20	$2,169	55%	45%	$0.02	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	2,107	15	$7,115	11%	77%	$0.39	0.29	0.29
California	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	642	18	$1,705	63%	59%	$0.28	0.38	0.38
California	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	19,751	15	$1,128	75%	N/A	$0.01	0.09	3
California	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	19,536	15	$674	75%	N/A	$0.00	0.00	0.00
California	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	19,635	15	$1,128	75%	N/A	$0.01	0.00	0.14
California	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	19,421	15	$674	75%	N/A	$0.00	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.06	0.06	0.08
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.08	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.09	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.09	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.10	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.06	0.00	0.00
California	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,656	10	$5,413	55%	94%	$0.47	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	20%	35%	$0.36	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	20%	35%	$0.08	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	20%	55%	$0.40	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	20%	55%	$0.37	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	504	12	$286	70%	95%	$0.07	0.42	0.52
California	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	462	12	$286	70%	94%	$0.08	0.38	0.47
California	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,627	25	$2,800	2.5%	100%	$0.04	0.21	0.21
California	School	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	331	12	$89	80%	8%	$0.03	0.02	0.02
California	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	527	9	$28	95%	25%	$0.01	0.17	0.17
California	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.08	0.65	0.65
California	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	0.21	0.21
California	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	0.14	0.14
California	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	828	10	$392	75%	75%	$0.07	0.64	0.64
California	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,777	10	$338	25%	94%	$0.01	1	1
California	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.06	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.08	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.09	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.09	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.10	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.06	0.00	0.00
California	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,632	10	$5,413	55%	94%	$0.47	0.02	0.02
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	20%	35%	$0.36	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	20%	35%	$0.08	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	20%	55%	$0.40	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	20%	55%	$0.37	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	501	12	$285	70%	95%	$0.07	0.00	0.00
California	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	459	12	$285	70%	94%	$0.08	0.00	0.00
California	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,528	25	$2,240	2.5%	100%	$0.03	0.00	0.00
California	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	519	9	$0.20	95%	25%	$0.00	0.00	0.00
California	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.08	0.01	0.01
California	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.00	0.00
California	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	816	10	$392	75%	75%	$0.07	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,721	10	$338	25%	94%	$0.01	0.02	0.02
California	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	17,988	15	$5,794	75%	N/A	$0.04	201	214
California	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,079	15	$253	100%	N/A	$0.03	0.00	0.00
California	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	17,882	15	$5,794	75%	N/A	$0.04	7	7
California	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,073	15	$253	100%	N/A	$0.03	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.06	0.90	1
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.08	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.09	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.07	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.09	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.10	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.07	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.07	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.06	0.00	0.00
California	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,694	10	$5,413	25%	94%	$0.46	7	7

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	75%	35%	$0.36	0.00	0.00
California	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	75%	35%	$0.08	0.01	0.01
California	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	75%	55%	$0.40	0.00	0.01
California	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	75%	55%	$0.37	0.12	0.14
California	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	504	12	$286	75%	95%	$0.07	5	6
California	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	462	12	$286	75%	95%	$0.08	5	6
California	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,776	25	$2,800	2.5%	100%	$0.04	2	2
California	School	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	338	12	$89	80%	8%	$0.03	0.37	0.37
California	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	539	9	$28	95%	25%	$0.01	2	2
California	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.08	8	8
California	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	2	2
California	School	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	1	1
California	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	847	10	$392	75%	75%	$0.07	8	8
California	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,862	10	$338	25%	94%	$0.01	15	15
California	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.06	0.02	0.02
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.08	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.09	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.09	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.10	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.07	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.07	0.00	0.00
California	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.06	0.00	0.00
California	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,637	10	$5,413	25%	94%	$0.47	0.15	0.15
California	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	75%	35%	$0.36	0.00	0.00
California	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	75%	35%	$0.08	0.00	0.00
California	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	75%	55%	$0.40	0.00	0.00
California	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	75%	55%	$0.37	0.00	0.00
California	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	501	12	$285	75%	95%	$0.07	0.14	0.14
California	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	459	12	$285	75%	95%	$0.08	0.13	0.13
California	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,548	25	$2,240	2.5%	100%	$0.03	0.00	0.00
California	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	520	9	$0.20	95%	25%	$0.00	0.05	0.05
California	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.08	0.20	0.20
California	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.06	0.06
California	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	818	10	$392	75%	75%	$0.07	0.18	0.18

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,732	10	$338	25%	94%	$0.01	0.32	0.32
California	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	647	4	$74	100%	N/A	$0.03	91	106
California	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	999	4	$74	95%	30%	$0.02	248	248
California	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	647	4	$74	100%	N/A	$0.03	1	1
California	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	999	4	$74	95%	30%	$0.02	7	7
California	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	201	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	514	15	$215	100%	N/A	$0.05	0.00	0.00
California	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,260	15	$-4506.2188	43%	N/A	$-0.12	78	100
California	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	134	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	343	15	$172	100%	N/A	$0.06	0.00	0.00
California	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,847	15	$-3285.2319	43%	N/A	$-0.13	2	2
California	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	672	15	$899	35%	98%	$0.15	143	143
California	Small Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,008	10	$1,344	10%	20%	$0.19	12	12
California	Small Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	672	5	$379	95%	72%	$0.13	277	277
California	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,681	15	$5,351	50%	94%	$0.36	442	442
California	Small Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	168	18	$616	45%	65%	$0.25	24	24
California	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	672	40	$26,019	2.0%	**%	$3.36	0.00	0.00
California	Small Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	336	12	$83	40%	39%	$0.02	25	25
California	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	7	25	$1,746	45%	65%	$0.34	1	1
California	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$256	25%	85%	.	0.00	0.00
California	Small Office	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	322	20	$525	45%	62%	$0.11	43	43
California	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,129	15%	83%	.	0.00	0.00
California	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	14	25	$285	15%	90%	$0.11	0.96	0.96

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Office	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,570	10%	74%	.	0.00	0.00
California	Small Office	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$419	10%	85%	.	0.00	0.00
California	Small Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	840	7	$506	90%	85%	$0.07	309	309
California	Small Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	527	10	$735	35%	68%	$0.20	54	54
California	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	980	25	$14	15%	90%	$0.00	56	56
California	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,099	25	$110	15%	75%	$0.01	51	51
California	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	417	15	$899	35%	98%	$0.25	2	2
California	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,044	15	$5,351	50%	94%	$0.59	7	7
California	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	417	40	$26,019	2.0%	**%	$5.41	0.00	0.00
California	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	9	25	$285	35%	90%	$0.20	0.01	0.01
California	Small Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	417	15	$2,568	10%	75%	$0.49	0.39	0.39
California	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	609	25	$14	80%	90%	$0.00	3	3
California	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	9	6	$0.21	100%	N/A	$0.00	8	8
California	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	9	6	$0.21	100%	N/A	$0.00	0.24	0.24
California	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	87	4	$98	100%	N/A	$0.31	4	4
California	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	87	4	$98	100%	N/A	$0.31	0.81	0.81
California	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
California	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.09	100%	N/A	$0.00	0.00	0.03
California	Small Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	23	20	$3	8.8%	100%	$0.02	1	1
California	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
California	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.09	100%	N/A	$0.00	0.00	0.00
California	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	508	15	$801	100%	N/A	$0.18	0.00	0.00
California	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,377	15	$1,602	100%	N/A	$0.13	0.00	0.00
California	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	854	15	$899	35%	98%	$0.12	0.00	0.00
California	Small Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	347	18	$616	45%	65%	$0.19	0.00	0.00
California	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	802	14	$4,417	5.0%	94%	$0.65	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	854	40	$26,019	2.0%	**%	$2.65	0.00	0.00
California	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,524	30	$47,489	5.0%	N/A	$1.24	0.00	0.00
California	Small Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,042	12	$83	40%	39%	$0.01	0.00	0.00
California	Small Office	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	939	25	$1,746	45%	65%	$0.18	0.00	0.00
California	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	105	25	$256	25%	85%	$0.24	0.00	0.00
California	Small Office	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	666	20	$525	45%	62%	$0.08	0.00	0.00
California	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	714	25	$2,129	15%	83%	$0.29	0.00	0.00
California	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	401	25	$285	15%	90%	$0.07	0.00	0.00
California	Small Office	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,570	10%	74%	.	0.00	0.00
California	Small Office	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$419	10%	85%	.	0.00	0.00
California	Small Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,736	7	$506	90%	85%	$0.05	0.00	0.00
California	Small Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	527	10	$735	35%	68%	$0.20	0.00	0.00
California	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,025	25	$14	15%	90%	$0.00	0.00	0.00
California	Small Office	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,271	25	$110	15%	75%	$0.00	0.00	0.00
California	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	292	15	$640	100%	N/A	$0.25	0.00	0.00
California	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	725	15	$1,281	100%	N/A	$0.20	0.00	0.00
California	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	444	15	$899	35%	98%	$0.23	0.00	0.00
California	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	417	14	$4,417	5.0%	94%	$1.26	0.00	0.00
California	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	444	40	$26,019	2.0%	**%	$5.08	0.00	0.00
California	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,065	30	$24,394	5.0%	N/A	$1.09	0.00	0.00
California	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	54	25	$256	75%	85%	$0.46	0.00	0.00
California	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	208	25	$285	35%	90%	$0.13	0.00	0.00
California	Small Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	723	15	$2,568	10%	75%	$0.41	0.00	0.00
California	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,054	25	$14	80%	90%	$0.00	0.00	0.00
California	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	240	8	$66	5.0%	95%	$0.05	11	11

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	712	8	$344	75%	70%	$0.08	389	389
California	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	591	15	$799	62%	90%	$0.15	343	343
California	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	253	8	$469	90%	55%	$0.31	102	102
California	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	2	13	$4	75%	95%	$0.18	2	2
California	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,339	17	$1,589	5.0%	95%	$0.07	115	115
California	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	240	8	$66	5.0%	95%	$0.05	0.32	0.32
California	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	712	8	$344	75%	70%	$0.08	10	10
California	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	591	15	$799	62%	90%	$0.15	8	8
California	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	253	8	$469	90%	55%	$0.31	2	2
California	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	2	13	$4	75%	95%	$0.18	0.05	0.05
California	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,339	17	$1,589	5.0%	95%	$0.07	2	2
California	Small Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	162	10	$213	0.5%	95%	$0.19	0.66	0.66
California	Small Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,729	8	$2,568	30%	78%	$0.25	351	351
California	Small Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,297	8	$1,926	30%	78%	$0.25	0.00	0.00
California	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	303	13	$150	100%	N/A	$0.06	0.00	0.00
California	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	385	13	$734	100%	N/A	$0.24	204	213
California	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	895	13	$5,980	25%	N/A	$0.83	157	165
California	Small Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	625	8	$469	75%	55%	$0.12	213	213
California	Small Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	58	15	$35	100%	N/A	$0.07	0.00	0.00
California	Small Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	72	15	$147	95%	N/A	$0.23	23	23
California	Small Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	64	25	$1,073	50%	N/A	$1.62	0.71	0.73
California	Small Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	40	17	$0.69	25%	N/A	$0.00	0.00	0.00

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California	Small Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$680	100%	N/A	$3.81	0.00	0.00
California	Small Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	23	8	$469	75%	55%	$3.32	9	9
California	Small Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	60	11	$23	95%	50%	$0.05	29	29
California	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	12	13	$10	95%	98%	$0.11	11	11
California	Small Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	131	10	$213	0.5%	95%	$0.23	0.01	0.01
California	Small Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,227	8	$2,568	30%	78%	$0.35	7	7
California	Small Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	920	8	$1,926	30%	78%	$0.35	0.00	0.00
California	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	12	13	$10	95%	98%	$0.11	0.28	0.28
California	Small Office	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	526	13	$690	100%	N/A	$0.16	13	13
California	Small Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	506	8	$469	75%	55%	$0.15	5	5
California	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,067	4	$30	85%	N/A	$0.00	0.00	53
California	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,808	1	$20	100%	N/A	$0.00	0.00	0.00
California	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	476	1	$15	100%	N/A	$0.00	0.00	0.00
California	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,084	12	$382	15%	N/A	$0.02	14	100
California	Small Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	92	8	$469	75%	55%	$0.85	16	16
California	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.77	10%	90%	$0.05	0.26	0.26
California	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	15	4	$0.00	75%	45%	$0.00	5	5
California	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	132	10	$0.65	95%	75%	$0.00	98	98
California	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	9	4	$0.38	5.0%	86%	$0.01	0.43	0.43
California	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	513	4	$102	60%	90%	$0.06	288	288
California	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.77	10%	90%	$0.05	0.00	0.00

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California	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	15	4	$0.00	75%	45%	$0.00	0.14	0.14
California	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	132	10	$0.65	95%	75%	$0.00	2	2
California	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	9	4	$0.38	5.0%	86%	$0.01	0.01	0.01
California	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	513	4	$102	60%	90%	$0.06	7	7
California	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	30	6	$33	100%	N/A	$0.22	0.91	0.91
California	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	30	6	$33	100%	N/A	$0.22	0.03	0.03
California	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	139	6	$16	100%	N/A	$0.02	12	12
California	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	139	6	$16	100%	N/A	$0.02	0.00	0.00
California	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	42	20	$116	100%	N/A	$0.27	0.00	0.00
California	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$156	100%	N/A	$0.32	10	12
California	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	37	20	$9	100%	N/A	$0.02	0.00	0.00
California	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	11	20	$4	100%	N/A	$0.03	0.00	0.00
California	Small Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	255	20	$32	8.8%	100%	$0.01	17	17
California	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	42	20	$116	100%	N/A	$0.27	0.00	0.00
California	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$156	100%	N/A	$0.32	0.61	0.64
California	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	37	20	$9	100%	N/A	$0.02	0.00	0.00
California	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	11	20	$4	100%	N/A	$0.03	0.00	0.00
California	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	57	9	$7	100%	N/A	$0.02	47	48
California	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	198	4	$745	10%	50%	$1.04	8	8
California	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	57	9	$7	100%	N/A	$0.02	1	1
California	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	198	4	$745	10%	50%	$1.05	0.22	0.22
California	Small Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	254	18	$616	45%	65%	$0.22	27	27
California	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,529	14	$4,417	5.0%	94%	$0.34	25	25
California	Small Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,019	12	$83	40%	39%	$0.01	56	56
California	Small Office	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,495	25	$1,746	45%	65%	$0.11	153	153
California	Small Office	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	251	25	$256	25%	85%	$0.10	17	17
California	Small Office	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	489	20	$525	45%	62%	$0.09	45	45
California	Small Office	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,631	25	$2,129	15%	83%	$0.08	107	107
California	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	729	25	$285	15%	90%	$0.04	31	31
California	Small Office	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,570	10%	74%	.	0.00	0.00
California	Small Office	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$419	10%	85%	.	0.00	0.00

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California	Small Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,274	7	$506	90%	85%	$0.06	308	308
California	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,486	25	$14	15%	90%	$0.00	57	57
California	Small Office	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,666	25	$110	15%	75%	$0.01	52	52
California	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	801	14	$4,417	5.0%	94%	$0.65	0.33	0.33
California	Small Office	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	131	25	$256	75%	85%	$0.19	0.35	0.35
California	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	382	25	$285	35%	90%	$0.07	0.49	0.49
California	Small Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	534	15	$2,568	10%	75%	$0.47	0.32	0.32
California	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	778	25	$14	80%	90%	$0.00	3	3
California	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	90	10	$12	100%	N/A	$0.02	41	41
California	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	90	10	$12	100%	N/A	$0.02	1	1
California	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	67	15	$17	95%	76%	$0.03	50	50
California	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,689	20	$286	55%	45%	$0.02	432	432
California	Small Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	45	7	$12	65%	25%	$0.05	0.00	0.00
California	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	61	15	$17	95%	76%	$0.03	1	1
California	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,532	20	$286	55%	45%	$0.02	4	4
California	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	750	15	$241	75%	N/A	$0.04	0.12	4
California	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	742	15	$144	75%	N/A	$0.02	0.00	0.00
California	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	750	15	$241	75%	N/A	$0.04	0.00	0.17
California	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	742	15	$144	75%	N/A	$0.02	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	62	10	$713	55%	80%	$1.61	1	1
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	90%	35%	$0.36	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	90%	35%	$0.08	0.01	0.01
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	90%	55%	$0.40	0.00	0.01
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	90%	55%	$0.37	0.08	0.10
California	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	251	25	$800	2.5%	100%	$0.31	0.26	0.26
California	Small Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	12	12	$25	80%	30%	$0.26	0.12	0.12
California	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	20	9	$7	95%	25%	$0.06	0.20	0.20
California	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	31	10	$100	75%	85%	$0.46	0.86	0.86
California	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	62	10	$713	55%	80%	$1.63	0.02	0.02
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	90%	35%	$0.36	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	90%	35%	$0.08	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	90%	55%	$0.40	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	90%	55%	$0.37	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	249	25	$640	2.5%	100%	$0.25	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	19	9	$0.05	95%	25%	$0.00	0.00	0.00
California	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	31	10	$100	75%	85%	$0.46	0.01	0.01
California	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	683	15	$1,241	75%	N/A	$0.21	253	261
California	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	41	15	$54	100%	N/A	$0.15	0.00	0.00
California	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	683	15	$1,241	75%	N/A	$0.21	9	9
California	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	41	15	$54	100%	N/A	$0.15	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	64	10	$713	25%	94%	$1.58	8	8
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	75%	35%	$0.36	0.00	0.04
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	75%	35%	$0.08	0.12	0.14
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	75%	55%	$0.40	0.00	0.11
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.37	0.90	1
California	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	257	25	$800	2.5%	100%	$0.30	3	3
California	Small Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	12	12	$25	80%	30%	$0.26	1	1
California	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	20	9	$7	95%	25%	$0.05	2	2
California	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	32	10	$100	75%	85%	$0.45	11	11
California	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	62	10	$713	25%	94%	$1.62	0.18	0.18
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	75%	35%	$0.36	0.00	0.00
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	75%	35%	$0.08	0.00	0.00
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	75%	55%	$0.40	0.00	0.00
California	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.37	0.02	0.02
California	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	250	25	$640	2.5%	100%	$0.25	0.00	0.00
California	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	19	9	$0.05	95%	25%	$0.00	0.06	0.06
California	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	31	10	$100	75%	85%	$0.46	0.25	0.25
California	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	92	4	$10	100%	N/A	$0.03	4	4
California	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	92	4	$10	100%	N/A	$0.03	0.06	0.06
California	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	241	15	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	617	15	$381	100%	N/A	$0.07	0.00	0.00
California	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,110	15	$-7982.2842	39%	N/A	$-0.18	20	26
California	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	166	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	425	15	$304	100%	N/A	$0.08	0.00	0.00
California	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,521	15	$-5819.4367	39%	N/A	$-0.19	0.56	0.57
California	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	824	15	$980	80%	98%	$0.14	95	95
California	Small Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,236	10	$2,381	10%	80%	$0.27	13	13
California	Small Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	824	5	$672	95%	72%	$0.19	75	75
California	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,060	15	$5,833	50%	94%	$0.32	121	121
California	Small Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	206	18	$672	45%	65%	$0.30	6	6
California	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	824	40	$28,364	2.0%	**%	$2.99	0.00	0.00
California	Small Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	412	12	$78	10%	39%	$0.02	1	1
California	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	9	25	$1,904	45%	62%	$0.76	0.29	0.29
California	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$280	25%	85%	.	0.00	0.00
California	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	395	20	$572	45%	62%	$0.13	12	12
California	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,320	15%	83%	.	0.00	0.00
California	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	18	25	$311	15%	90%	$0.32	0.26	0.26
California	Small Retail	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,892	10%	74%	.	0.00	0.00
California	Small Retail	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$457	10%	85%	.	0.00	0.00
California	Small Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,030	7	$552	90%	85%	$0.09	85	85
California	Small Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	579	10	$691	35%	68%	$0.17	13	13
California	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,201	25	$13	15%	90%	$0.00	15	15
California	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,347	25	$103	15%	72%	$0.01	13	13
California	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	526	15	$980	80%	98%	$0.21	1	1
California	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,317	15	$5,833	50%	94%	$0.51	2	2

Table C-2.2. Commercial Measure Details

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California	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	526	40	$28,364	2.0%	**%	$4.68	0.00	0.00
California	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	11	25	$311	35%	90%	$0.58	0.00	0.00
California	Small Retail	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	526	15	$2,800	10%	75%	$0.55	0.11	0.11
California	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	768	25	$13	80%	90%	$0.00	1	1
California	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	10	6	$0.22	100%	N/A	$0.00	2	2
California	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	10	6	$0.22	100%	N/A	$0.00	0.08	0.08
California	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	12	4	$14	100%	N/A	$0.31	0.19	0.19
California	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	12	4	$14	100%	N/A	$0.31	0.03	0.03
California	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	0.49	20	$0.07	100%	N/A	$0.01	0.00	0.00
California	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.03	100%	N/A	$0.00	0.00	0.00
California	Small Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	9	20	$1	8.8%	100%	$0.02	0.21	0.21
California	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	0.49	20	$0.07	100%	N/A	$0.01	0.00	0.00
California	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.03	100%	N/A	$0.00	0.00	0.00
California	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	525	15	$1,418	100%	N/A	$0.31	0.00	0.00
California	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,281	15	$2,837	100%	N/A	$0.25	0.00	0.00
California	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	992	15	$980	80%	98%	$0.11	0.00	0.00
California	Small Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	358	18	$672	45%	65%	$0.20	0.00	0.00
California	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	664	14	$4,816	5.0%	94%	$0.86	0.00	0.00
California	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	992	40	$28,364	2.0%	**%	$2.48	0.00	0.00
California	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,727	30	$84,122	5.0%	N/A	$2.08	0.00	0.00
California	Small Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,076	12	$78	10%	39%	$0.01	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	966	25	$1,904	45%	62%	$0.19	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	83	25	$280	25%	85%	$0.32	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	688	20	$572	45%	62%	$0.08	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	491	25	$2,320	15%	83%	$0.46	0.00	0.00

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California	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	338	25	$311	15%	90%	$0.09	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,892	10%	74%	.	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$457	10%	85%	.	0.00	0.00
California	Small Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,793	7	$552	90%	85%	$0.06	0.00	0.00
California	Small Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	579	10	$691	35%	68%	$0.17	0.00	0.00
California	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	2,091	25	$13	15%	90%	$0.00	0.00	0.00
California	Small Retail	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,345	25	$103	15%	72%	$0.00	0.00	0.00
California	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	343	15	$1,135	100%	N/A	$0.38	0.00	0.00
California	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	811	15	$2,270	100%	N/A	$0.32	0.00	0.00
California	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	589	15	$980	80%	98%	$0.19	0.00	0.00
California	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	394	14	$4,816	5.0%	94%	$1.45	0.00	0.00
California	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	589	40	$28,364	2.0%	**%	$4.18	0.00	0.00
California	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,447	30	$43,212	5.0%	N/A	$1.63	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	49	25	$280	75%	85%	$0.55	0.00	0.00
California	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	201	25	$311	35%	90%	$0.15	0.00	0.00
California	Small Retail	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	852	15	$2,800	10%	75%	$0.38	0.00	0.00
California	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	1,243	25	$13	80%	90%	$0.00	0.00	0.00
California	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	262	8	$72	5.0%	95%	$0.05	4	4
California	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	673	8	$359	75%	70%	$0.09	114	114
California	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	559	15	$755	62%	90%	$0.15	101	101
California	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	282	8	$512	45%	54%	$0.30	17	17
California	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	39	13	$59	75%	95%	$0.18	9	9
California	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,550	17	$1,733	5.0%	95%	$0.07	39	39
California	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	262	8	$72	5.0%	95%	$0.05	0.10	0.10
California	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	673	8	$359	75%	70%	$0.09	3	3
California	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	559	15	$755	62%	90%	$0.15	2	2

Table C-2.2. Commercial Measure Details

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California	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	282	8	$512	45%	54%	$0.30	0.46	0.46
California	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	39	13	$59	75%	95%	$0.18	0.23	0.23
California	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,550	17	$1,733	5.0%	95%	$0.07	0.74	0.74
California	Small Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	261	10	$233	0.5%	95%	$0.13	0.33	0.33
California	Small Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,863	8	$2,800	30%	84%	$0.16	192	192
California	Small Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,147	8	$2,100	30%	84%	$0.16	0.00	0.00
California	Small Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	423	6	$157	2.5%	80%	$0.08	2	2
California	Small Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	317	6	$161	2.5%	80%	$0.10	1	1
California	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	718	13	$1,007	100%	N/A	$0.17	118	122
California	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	667	13	$338	100%	N/A	$0.06	0.00	0.00
California	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,436	13	$8,562	25%	N/A	$0.74	75	78
California	Small Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,188	8	$512	5.0%	54%	$0.07	8	8
California	Small Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	435	15	$167	100%	N/A	$0.04	0.00	0.00
California	Small Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	537	15	$704	95%	N/A	$0.15	55	55
California	Small Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	478	16	$5,125	50%	N/A	$1.19	2	2
California	Small Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	304	11	$1	25%	N/A	$0.00	0.00	0.00
California	Small Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	152	15	$3,247	100%	N/A	$2.44	0.00	0.00
California	Small Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	202	8	$512	5.0%	54%	$0.42	1	1
California	Small Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	369	11	$143	95%	50%	$0.05	56	56
California	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	73	13	$63	95%	98%	$0.11	22	22

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California	Small Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	261	10	$233	0.5%	95%	$0.13	0.00	0.00
California	Small Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,998	8	$2,800	30%	84%	$0.23	3	3
California	Small Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,498	8	$2,100	30%	84%	$0.23	0.00	0.00
California	Small Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	327	6	$80	2.5%	80%	$0.05	0.05	0.05
California	Small Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	180	6	$70	2.5%	80%	$0.08	0.02	0.02
California	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	73	13	$63	95%	98%	$0.11	0.52	0.52
California	Small Retail	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,308	13	$3,728	100%	N/A	$0.35	10	10
California	Small Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,190	8	$512	5.0%	54%	$0.07	0.23	0.23
California	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,142	4	$68	85%	N/A	$0.00	0.00	56
California	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,247	1	$45	100%	N/A	$0.00	0.00	0.00
California	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,643	1	$35	100%	N/A	$0.00	0.00	0.00
California	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,202	12	$853	15%	N/A	$0.02	16	108
California	Small Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	375	8	$512	5.0%	54%	$0.23	1	1
California	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.75	10%	90%	$0.05	0.08	0.08
California	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	16	4	$0.00	10%	45%	$0.00	0.23	0.23
California	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	7	7
California	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	9	4	$0.42	5.0%	86%	$0.01	0.13	0.13
California	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	56	4	$11	60%	90%	$0.06	9	9
California	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.75	10%	90%	$0.05	0.00	0.00
California	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	16	4	$0.00	10%	45%	$0.00	0.00	0.00
California	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	0.18	0.18

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California	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	9	4	$0.42	5.0%	86%	$0.01	0.00	0.00
California	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	56	4	$11	60%	90%	$0.06	0.27	0.27
California	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	32	6	$35	100%	N/A	$0.22	0.30	0.30
California	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	32	6	$35	100%	N/A	$0.22	0.01	0.01
California	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	36	6	$4	100%	N/A	$0.02	1	1
California	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	36	6	$4	100%	N/A	$0.02	0.00	0.00
California	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	16	20	$45	100%	N/A	$0.27	0.00	0.00
California	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	18	20	$61	100%	N/A	$0.32	1	1
California	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	14	20	$3	100%	N/A	$0.02	0.00	0.00
California	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	4	20	$1	100%	N/A	$0.03	0.00	0.00
California	Small Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	100	20	$12	8.8%	100%	$0.01	2	2
California	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	16	20	$45	100%	N/A	$0.27	0.00	0.00
California	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	18	20	$61	100%	N/A	$0.32	0.07	0.07
California	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	14	20	$3	100%	N/A	$0.02	0.00	0.00
California	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	4	20	$1	100%	N/A	$0.03	0.00	0.00
California	Small Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	162	18	$672	45%	65%	$0.29	2	2
California	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	974	14	$4,816	5.0%	94%	$0.59	2	2
California	Small Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	649	12	$78	10%	39%	$0.01	1	1
California	Small Retail	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,405	25	$1,904	45%	62%	$0.13	20	20
California	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	160	25	$280	25%	85%	$0.17	1	1
California	Small Retail	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	311	20	$572	45%	62%	$0.12	4	4
California	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,676	25	$2,320	15%	83%	$0.13	10	10
California	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	464	25	$311	15%	90%	$0.06	2	2
California	Small Retail	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,892	10%	74%	.	0.00	0.00
California	Small Retail	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$457	10%	85%	.	0.00	0.00
California	Small Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	812	7	$552	90%	85%	$0.08	29	29
California	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	946	25	$13	15%	90%	$0.00	5	5
California	Small Retail	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,061	25	$103	15%	72%	$0.01	4	4
California	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	508	14	$4,816	5.0%	94%	$1.13	0.03	0.03
California	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	83	25	$280	75%	85%	$0.33	0.03	0.03

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California	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	242	25	$311	35%	90%	$0.12	0.04	0.04
California	Small Retail	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	338	15	$2,800	10%	75%	$0.60	0.03	0.03
California	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	493	25	$13	80%	90%	$0.00	0.30	0.30
California	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	82	10	$11	100%	N/A	$0.02	11	11
California	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	82	10	$11	100%	N/A	$0.02	0.36	0.36
California	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	101	15	$18	95%	76%	$0.02	23	23
California	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,527	20	$311	55%	45%	$0.01	201	201
California	Small Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	49	7	$14	65%	25%	$0.05	0.00	0.00
California	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	81	15	$18	95%	76%	$0.03	0.47	0.47
California	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,042	20	$311	55%	45%	$0.02	1	1
California	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	584	15	$241	75%	N/A	$0.05	0.01	0.72
California	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	577	15	$144	75%	N/A	$0.03	0.00	0.00
California	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	567	15	$241	75%	N/A	$0.05	0.00	0.02
California	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	561	15	$144	75%	N/A	$0.03	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.06	0.06	0.07
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.08	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.09	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.07	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.09	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.10	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.07	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.07	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.06	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	49	10	$777	75%	94%	$2.26	0.30	0.30
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.36	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.40	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.37	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	196	25	$800	2.5%	100%	$0.40	0.04	0.04
California	Small Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	9	12	$25	80%	90%	$0.34	0.05	0.05
California	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	15	9	$7	95%	25%	$0.08	0.03	0.03
California	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	24	10	$109	75%	95%	$0.64	0.15	0.15
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.06	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.09	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.07	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.09	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.10	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.07	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.07	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.06	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	47	10	$777	75%	94%	$2.35	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.36	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.40	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.37	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	188	25	$640	2.5%	100%	$0.33	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	15	9	$0.05	95%	25%	$0.00	0.00	0.00
California	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	23	10	$109	75%	95%	$0.66	0.00	0.00
California	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	532	15	$1,241	75%	N/A	$0.27	39	41
California	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	31	15	$54	100%	N/A	$0.19	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	516	15	$1,241	75%	N/A	$0.27	1	1
California	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	31	15	$54	100%	N/A	$0.20	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.06	0.82	0.96
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.08	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.09	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.09	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.10	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.06	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	50	10	$777	25%	94%	$2.21	1	1
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.36	0.00	0.02
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.07	0.08
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.40	0.00	0.07

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.55	0.63
California	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	200	25	$800	2.5%	100%	$0.39	0.56	0.56
California	Small Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.33	0.81	0.81
California	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	15	9	$7	95%	25%	$0.08	0.43	0.43
California	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	25	10	$109	75%	95%	$0.62	2	2
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.06	0.02	0.02
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.08	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.09	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.09	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.10	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.07	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.06	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	47	10	$777	25%	94%	$2.34	0.02	0.02
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.36	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.40	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.01	0.01
California	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	189	25	$640	2.5%	100%	$0.33	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	15	9	$0.05	95%	25%	$0.00	0.00	0.00
California	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	23	10	$109	75%	95%	$0.66	0.04	0.04
California	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	415	4	$47	100%	N/A	$0.03	6	6
California	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	415	4	$47	100%	N/A	$0.03	0.09	0.09
California	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	93	5	$1,703	95%	81%	$4.23	0.22	0.22
California	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	567	10	$5,898	25%	70%	$1.48	0.30	0.30
California	Warehouse	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	375	15	$13,694	45%	90%	$4.18	0.46	0.46
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,573	20	$4,392	100%	N/A	$0.28	1	2
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	524	20	$1,464	100%	N/A	$0.28	0.00	0.00
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,170	20	$3,266	100%	N/A	$0.28	0.00	0.00
California	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	750	15	$3,500	80%	98%	$0.53	1	1
California	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	600	7	$729	10%	94%	$0.22	0.15	0.15
California	Warehouse	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	1,050	15	$65	65%	35%	$0.01	0.65	0.65
California	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	300	13	$527	75%	65%	$0.22	0.39	0.39
California	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	750	15	$1,750	75%	76%	$0.27	1	1
California	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	750	40	$1,300	2.0%	**%	$11.73	0.00	0.00
California	Warehouse	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	375	12	$70	10%	39%	$0.02	0.03	0.03
California	Warehouse	Cooling Chillers	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	14	25	$6,800	45%	59%	$45.74	0.00	0.00
California	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,000	25%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$8,288	15%	80%	.	0.00	0.00
California	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	0.00	25	$1,111	15%	90%	.	0.00	0.00
California	Warehouse	Cooling Chillers	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$13,900	10%	65%	.	0.00	0.00
California	Warehouse	Cooling Chillers	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,633	10%	85%	.	0.00	0.00
California	Warehouse	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (CA State Code)	No Insulation	Per Building	Existing	112	15	$205	65%	45%	$0.21	0.08	0.08
California	Warehouse	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	937	7	$1,971	90%	85%	$0.38	1	1
California	Warehouse	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	305	10	$621	35%	68%	$0.29	0.16	0.16
California	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,093	25	$12	15%	90%	$0.00	0.32	0.32
California	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,226	25	$92	15%	71%	$0.01	0.27	0.27
California	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	57	5	$1,703	95%	81%	$6.84	0.00	0.00
California	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	350	10	$5,308	25%	70%	$2.16	0.00	0.00
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,173	20	$3,953	100%	N/A	$0.34	0.05	0.05
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	391	20	$1,317	100%	N/A	$0.34	0.00	0.00
California	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	872	20	$2,939	100%	N/A	$0.34	0.00	0.00
California	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	463	15	$3,500	80%	98%	$0.86	0.02	0.02
California	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	370	7	$656	10%	94%	$0.32	0.00	0.00
California	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	185	13	$475	75%	65%	$0.32	0.00	0.00
California	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	463	15	$1,750	75%	76%	$0.43	0.01	0.01
California	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	463	40	$1,300	2.0%	**%	$18.99	0.00	0.00
California	Warehouse	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	463	15	$10,000	10%	75%	$2.47	0.00	0.00
California	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	675	25	$12	80%	90%	$0.00	0.02	0.02
California	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	251	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	643	15	$680	100%	N/A	$0.12	0.00	0.00
California	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,328	15	$-14254.079	43%	N/A	$-0.31	3	4

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	187	15	$0.00	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	479	15	$544	100%	N/A	$0.13	0.00	0.00
California	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,969	15	$-10391.851	43%	N/A	$-0.30	0.09	0.09
California	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	841	15	$3,500	80%	98%	$0.48	14	14
California	Warehouse	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,261	10	$4,252	10%	40%	$0.48	0.99	0.99
California	Warehouse	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	841	5	$1,200	95%	72%	$0.33	11	11
California	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,103	15	$20,833	50%	94%	$1.13	18	18
California	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	841	15	$1,750	75%	76%	$0.24	7	7
California	Warehouse	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	210	18	$2,400	45%	65%	$1.19	0.93	0.93
California	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	841	40	$1,300	2.0%	**%	$10.46	0.00	0.00
California	Warehouse	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	420	12	$70	10%	39%	$0.02	0.24	0.24
California	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,800	45%	59%	.	0.00	0.00
California	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	0.00	25	$1,000	25%	85%	.	0.00	0.00
California	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	403	20	$2,044	45%	60%	$0.50	1	1
California	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$8,288	15%	80%	.	0.00	0.00
California	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	18	25	$1,111	15%	90%	$5.79	0.03	0.03
California	Warehouse	Cooling Dx Evap	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$13,900	10%	65%	.	0.00	0.00
California	Warehouse	Cooling Dx Evap	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,633	10%	85%	.	0.00	0.00
California	Warehouse	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,051	7	$1,971	90%	85%	$0.34	12	12
California	Warehouse	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	305	10	$621	35%	68%	$0.29	0.97	0.97
California	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	1,226	25	$12	15%	90%	$0.00	2	2
California	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,375	25	$92	15%	71%	$0.01	1	1
California	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	582	15	$3,500	80%	98%	$0.69	0.23	0.23
California	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,456	15	$20,833	50%	94%	$1.64	0.32	0.32
California	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	582	15	$1,750	75%	76%	$0.34	0.14	0.14
California	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	582	40	$1,300	2.0%	**%	$15.10	0.00	0.00
California	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	12	25	$1,111	35%	90%	$8.35	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	582	15	$10,000	10%	75%	$1.96	0.01	0.01
California	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	849	25	$12	80%	90%	$0.00	0.17	0.17
California	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	40	6	$0.88	100%	N/A	$0.00	3	3
California	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	40	6	$0.88	100%	N/A	$0.00	0.09	0.09
California	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	56	4	$63	100%	N/A	$0.31	0.27	0.27
California	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	56	4	$63	100%	N/A	$0.31	0.05	0.05
California	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.22	100%	N/A	$0.01	0.00	0.00
California	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	29	20	$4	8.8%	100%	$0.02	0.21	0.21
California	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.22	100%	N/A	$0.01	0.00	0.00
California	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	887	15	$2,533	100%	N/A	$0.33	0.00	0.00
California	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,833	15	$5,067	100%	N/A	$0.20	5	6
California	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	995	15	$3,500	80%	98%	$0.40	2	2
California	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,743	15	$1,750	75%	76%	$0.07	5	5
California	Warehouse	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	685	18	$2,400	45%	65%	$0.37	0.68	0.68
California	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,622	14	$9,070	5.0%	94%	$0.41	0.41	0.41
California	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	995	40	$1,300	2.0%	**%	$8.84	0.00	0.00
California	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,920	30	$50,218	5.0%	N/A	$2.34	0.37	0.50
California	Warehouse	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,057	12	$70	10%	39%	$0.00	0.26	0.26
California	Warehouse	Heat Pump	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,290	25	$6,800	45%	59%	$0.20	2	2
California	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	365	25	$1,000	25%	85%	$0.27	0.25	0.25
California	Warehouse	Heat Pump	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	1,316	20	$2,044	45%	60%	$0.15	1	1
California	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,935	25	$8,288	15%	80%	$0.16	1	1
California	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	1,271	25	$1,111	15%	90%	$0.08	0.53	0.53

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Heat Pump	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$13,900	10%	65%	.	0.00	0.00
California	Warehouse	Heat Pump	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,633	10%	85%	.	0.00	0.00
California	Warehouse	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,429	7	$1,971	90%	85%	$0.11	8	8
California	Warehouse	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	305	10	$621	35%	68%	$0.29	0.20	0.20
California	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	3,999	25	$12	15%	90%	$0.00	1	1
California	Warehouse	Heat Pump	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,484	25	$92	15%	71%	$0.00	1	1
California	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	696	15	$2,027	100%	N/A	$0.33	0.00	0.00
California	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	2,287	15	$4,054	100%	N/A	$0.20	0.17	0.17
California	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	727	15	$3,500	80%	98%	$0.55	0.05	0.05
California	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,006	15	$1,750	75%	76%	$0.10	0.10	0.10
California	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,917	14	$9,070	5.0%	94%	$0.56	0.00	0.00
California	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	727	40	$1,300	2.0%	**%	$12.09	0.00	0.00
California	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	4,612	30	$77,164	5.0%	N/A	$1.54	0.00	0.00
California	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	267	25	$1,000	75%	85%	$0.36	0.00	0.00
California	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	929	25	$1,111	35%	90%	$0.12	0.01	0.01
California	Warehouse	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,006	15	$10,000	10%	75%	$0.57	0.01	0.01
California	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	2,924	25	$12	80%	90%	$0.00	0.11	0.11
California	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	936	8	$260	5.0%	95%	$0.05	4	4
California	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	606	8	$680	75%	70%	$0.19	31	31
California	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	504	15	$681	62%	90%	$0.15	28	28
California	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$1,829	90%	50%	$1.00	10	10
California	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$58	75%	95%	$0.18	2	2
California	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	9,110	17	$6,190	5.0%	95%	$0.07	43	43
California	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	936	8	$260	5.0%	95%	$0.05	0.12	0.12
California	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	606	8	$680	75%	70%	$0.19	0.85	0.85
California	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	504	15	$681	62%	90%	$0.15	0.70	0.70

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$1,829	90%	50%	$1.00	0.28	0.28
California	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$58	75%	95%	$0.18	0.07	0.07
California	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	9,110	17	$6,190	5.0%	95%	$0.07	0.82	0.82
California	Warehouse	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	245	10	$832	0.5%	95%	$0.48	0.09	0.09
California	Warehouse	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,372	8	$8,000	10%	98%	$0.97	11	11
California	Warehouse	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,029	8	$6,000	10%	98%	$0.97	8	8
California	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	831	13	$986	100%	N/A	$0.15	42	44
California	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	722	13	$189	100%	N/A	$0.03	0.00	0.00
California	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,471	13	$12,329	25%	N/A	$1.04	24	25
California	Warehouse	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,329	8	$1,829	75%	50%	$0.23	40	40
California	Warehouse	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,834	15	$1,206	100%	N/A	$0.08	0.00	0.00
California	Warehouse	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,289	15	$4,386	95%	N/A	$0.22	78	80
California	Warehouse	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,036	22	$30,566	50%	N/A	$1.53	2	2
California	Warehouse	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,282	15	$219	25%	N/A	$0.02	0.00	0.00
California	Warehouse	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	618	15	$19,445	100%	N/A	$3.60	0.00	0.00
California	Warehouse	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,082	8	$1,829	75%	50%	$0.28	37	37
California	Warehouse	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	49	11	$19	95%	50%	$0.05	2	2
California	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.11	0.92	0.92
California	Warehouse	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	412	10	$832	0.5%	95%	$0.29	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,044	8	$8,000	10%	98%	$1.27	0.24	0.24
California	Warehouse	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	783	8	$6,000	10%	98%	$1.27	0.00	0.00
California	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.11	0.02	0.02
California	Warehouse	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,267	13	$6,371	100%	N/A	$0.35	5	5
California	Warehouse	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,236	8	$1,829	75%	50%	$0.14	2	2
California	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,167	4	$93	85%	N/A	$0.00	0.00	72
California	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,272	1	$61	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,729	1	$47	100%	N/A	$0.00	0.00	0.00
California	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,226	12	$1,158	15%	N/A	$0.02	5	51
California	Warehouse	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	600	8	$1,829	75%	50%	$0.51	7	7
California	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.54	10%	90%	$0.05	0.01	0.01
California	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	62	4	$0.00	10%	45%	$0.00	0.28	0.28
California	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	153	10	$0.75	95%	75%	$0.00	11	11
California	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$1	5.0%	86%	$0.06	0.02	0.02
California	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	66	4	$13	60%	90%	$0.06	3	3
California	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.54	10%	90%	$0.05	0.00	0.00
California	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	62	4	$0.00	10%	45%	$0.00	0.00	0.00
California	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	153	10	$0.75	95%	75%	$0.00	0.28	0.28
California	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$1	5.0%	86%	$0.06	0.00	0.00
California	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	66	4	$13	60%	90%	$0.06	0.10	0.10
California	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	127	6	$138	100%	N/A	$0.22	0.37	0.37
California	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	127	6	$138	100%	N/A	$0.22	0.01	0.01
California	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	94	6	$11	100%	N/A	$0.02	0.84	0.84

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California	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	94	6	$11	100%	N/A	$0.02	0.00	0.00
California	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$145	100%	N/A	$0.27	0.00	0.00
California	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	59	20	$194	100%	N/A	$0.32	1	1
California	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	46	20	$11	100%	N/A	$0.02	0.00	0.00
California	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	14	20	$5	100%	N/A	$0.03	0.00	0.00
California	Warehouse	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	319	20	$40	8.8%	100%	$0.01	2	2
California	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$145	100%	N/A	$0.27	0.00	0.00
California	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	59	20	$194	100%	N/A	$0.32	0.07	0.07
California	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	46	20	$11	100%	N/A	$0.02	0.00	0.00
California	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	14	20	$5	100%	N/A	$0.03	0.00	0.00
California	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,250	15	$1,750	75%	76%	$0.09	12	12
California	Warehouse	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	562	18	$2,400	45%	65%	$0.45	1	1
California	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,375	14	$9,070	5.0%	94%	$0.32	1	1
California	Warehouse	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,250	12	$70	10%	39%	$0.00	0.77	0.77
California	Warehouse	Space Heat	Insulation - Ceiling	R-25ci (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,277	25	$6,800	45%	59%	$0.15	10	10
California	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	Existing	554	25	$1,000	25%	85%	$0.18	0.98	0.98
California	Warehouse	Space Heat	Insulation - Duct	R-8 (CA State Code)	No Insulation	Per Building	Existing	1,080	20	$2,044	45%	60%	$0.19	2	2
California	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-25 (CA State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,515	25	$8,288	15%	80%	$0.09	8	8
California	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	Existing	1,609	25	$1,111	15%	90%	$0.07	1	1
California	Warehouse	Space Heat	Insulation - Wall	R-16 (CA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$13,900	10%	65%	.	0.00	0.00
California	Warehouse	Space Heat	Insulation - Wall	R-21	R-16 (CA State Code)	Per Building	Existing	0.00	25	$1,633	10%	85%	.	0.00	0.00
California	Warehouse	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,812	7	$1,971	90%	85%	$0.13	16	16
California	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	Existing	3,279	25	$12	15%	90%	$0.00	3	3
California	Warehouse	Space Heat	Windows-High Efficiency	U-0.47 (CA State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,677	25	$92	15%	71%	$0.00	2	2
California	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,730	15	$1,750	75%	76%	$0.12	0.23	0.23
California	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,595	14	$9,070	5.0%	94%	$0.41	0.02	0.02
California	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-25ci (CA State Code)	Per Building	New	426	25	$1,000	75%	85%	$0.23	0.02	0.02
California	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30	R-25 (CA State Code)	Per Building	New	1,237	25	$1,111	35%	90%	$0.09	0.04	0.04
California	Warehouse	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,730	15	$10,000	10%	75%	$0.66	0.02	0.02
California	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.47 (CA State Code)	Per Building	New	2,521	25	$12	80%	90%	$0.00	0.26	0.26

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California	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	111	10	$15	100%	N/A	$0.02	4	4
California	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	111	10	$15	100%	N/A	$0.02	0.15	0.15
California	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	106	15	$66	95%	76%	$0.07	2	2
California	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,652	20	$1,113	55%	45%	$0.04	66	66
California	Warehouse	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	176	7	$50	65%	25%	$0.05	2	2
California	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	82	15	$66	95%	76%	$0.09	0.14	0.14
California	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,065	20	$1,113	55%	45%	$0.05	0.61	0.61
California	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,550	15	$241	75%	N/A	$0.02	0.01	0.47
California	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,533	15	$144	75%	N/A	$0.01	0.00	0.00
California	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,550	15	$241	75%	N/A	$0.02	0.00	0.01
California	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,533	15	$144	75%	N/A	$0.01	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	130	10	$2,778	55%	94%	$3.04	0.14	0.14
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.36	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.40	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.37	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	520	25	$800	2.5%	100%	$0.15	0.02	0.02
California	Warehouse	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	26	12	$25	80%	90%	$0.13	0.03	0.03
California	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	41	9	$5	95%	25%	$0.02	0.02	0.02

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	0.33	0.33
California	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	0.23	0.23
California	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	65	10	$78	75%	95%	$0.17	0.10	0.10
California	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	128	10	$2,778	55%	94%	$3.07	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.36	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.40	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.37	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	515	25	$640	2.5%	100%	$0.12	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	41	9	$0.04	95%	25%	$0.00	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.00	0.00
California	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	64	10	$78	75%	95%	$0.17	0.00	0.00
California	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,411	15	$1,241	75%	N/A	$0.10	24	26
California	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	84	15	$54	100%	N/A	$0.07	0.00	0.00
California	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,411	15	$1,241	75%	N/A	$0.10	0.91	0.93
California	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	84	15	$54	100%	N/A	$0.07	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	132	10	$2,778	25%	94%	$2.98	0.89	0.89
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.36	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.40	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.37	0.01	0.01
California	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	531	25	$800	2.5%	100%	$0.15	0.37	0.37
California	Warehouse	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (CA State Code)	No Insulation	Per Building	Existing	26	12	$25	80%	90%	$0.12	0.54	0.54
California	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	42	9	$5	95%	25%	$0.02	0.28	0.28
California	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	4	4
California	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	3	3
California	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	66	10	$78	75%	95%	$0.17	1	1
California	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	129	10	$2,778	25%	94%	$3.06	0.01	0.01
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.36	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.40	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.37	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	517	25	$640	2.5%	100%	$0.12	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	41	9	$0.04	95%	25%	$0.00	0.00	0.00
California	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.10	0.10
California	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	64	10	$78	75%	95%	$0.17	0.02	0.02
Idaho	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	48	4	$5	100%	N/A	$0.03	1	1
Idaho	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	48	4	$5	100%	N/A	$0.03	0.24	0.24
Idaho	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	456	12	$76	90%	90%	$0.02	7	7
Idaho	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	41	12	$107	35%	90%	$0.34	0.28	0.28
Idaho	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	196	12	$47	95%	85%	$0.03	3	3
Idaho	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	341	12	$193	19%	55%	$0.07	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	557	12	$356	55%	21%	$0.08	1	1
Idaho	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	962	12	$542	14%	75%	$0.07	2	2
Idaho	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	456	12	$76	90%	90%	$0.02	2	2
Idaho	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	41	12	$107	35%	90%	$0.34	0.08	0.08
Idaho	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	196	12	$47	95%	85%	$0.03	1	1
Idaho	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	341	12	$193	19%	55%	$0.07	0.00	0.00
Idaho	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	557	12	$356	55%	21%	$0.08	0.44	0.44
Idaho	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	962	12	$542	14%	75%	$0.07	0.69	0.69
Idaho	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	291	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	744	15	$272	100%	N/A	$0.04	0.00	0.00
Idaho	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	6,168	15	$-5701.6316	35%	N/A	$-0.14	16	22
Idaho	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	185	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	474	15	$217	100%	N/A	$0.05	0.00	0.00
Idaho	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,928	15	$-4156.7405	35%	N/A	$-0.16	5	5
Idaho	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,020	15	$1,050	80%	98%	$0.12	90	90
Idaho	Grocery	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,530	10	$1,701	10%	90%	$0.16	14	14
Idaho	Grocery	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,020	5	$480	95%	72%	$0.11	72	72
Idaho	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,551	15	$6,250	50%	94%	$0.28	114	114
Idaho	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,020	15	$525	75%	75%	$0.06	48	48
Idaho	Grocery	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	255	18	$720	45%	65%	$0.30	5	5
Idaho	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	459	12	$5,450	10%	75%	$1.55	2	2
Idaho	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,020	40	$30,390	2.0%	**%	$2.60	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	510	12	$59	10%	39%	$0.02	1	1

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Idaho	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	39	25	$1,580	45%	49%	$3.91	0.68	0.68
Idaho	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	3	25	$760	25%	85%	$20.94	0.05	0.05
Idaho	Grocery	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	306	20	$521	45%	61%	$0.17	6	6
Idaho	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	183	20	$91	45%	85%	$0.05	5	5
Idaho	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,820	15%	84%	.	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$870	15%	90%	.	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	65%	.	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,275	7	$591	90%	85%	$0.09	75	75
Idaho	Grocery	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	338	10	$526	35%	68%	$0.22	5	5
Idaho	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,569	25	$2	15%	90%	$0.00	14	14
Idaho	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,335	25	$87	15%	61%	$0.01	8	8
Idaho	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	601	15	$1,050	80%	98%	$0.20	16	16
Idaho	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,504	15	$6,250	50%	94%	$0.48	22	22
Idaho	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	601	15	$525	75%	75%	$0.10	9	9
Idaho	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	270	12	$5,450	10%	75%	$2.62	0.57	0.57
Idaho	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	601	40	$30,390	2.0%	**%	$4.41	0.00	0.00
Idaho	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	2	25	$760	75%	85%	$35.49	0.02	0.02
Idaho	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	108	20	$91	45%	85%	$0.08	0.86	0.86
Idaho	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	926	25	$2	80%	90%	$0.00	15	15
Idaho	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	16	6	$0.36	100%	N/A	$0.00	2	2
Idaho	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	16	6	$0.36	100%	N/A	$0.00	0.86	0.86
Idaho	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	6	4	$7	100%	N/A	$0.32	0.05	0.05
Idaho	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	6	4	$7	100%	N/A	$0.32	0.12	0.12
Idaho	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.70	100%	N/A	$0.01	0.00	0.00
Idaho	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	13	20	$0.35	100%	N/A	$0.00	0.00	0.02
Idaho	Grocery	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	108	20	$13	8.8%	100%	$0.01	1	1
Idaho	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.70	100%	N/A	$0.01	0.00	0.00

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Idaho	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	13	20	$0.35	100%	N/A	$0.00	0.00	0.01
Idaho	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	862	15	$1,013	100%	N/A	$0.14	0.00	0.00
Idaho	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,567	15	$2,027	100%	N/A	$0.09	10	12
Idaho	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,314	15	$1,050	80%	98%	$0.09	7	7
Idaho	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,576	15	$525	75%	75%	$0.02	10	10
Idaho	Grocery	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	644	18	$720	45%	65%	$0.12	1	1
Idaho	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,893	14	$5,160	5.0%	94%	$0.32	0.60	0.60
Idaho	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,159	12	$5,450	10%	75%	$0.61	0.59	0.59
Idaho	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,314	40	$30,390	2.0%	**%	$2.02	0.00	0.00
Idaho	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,852	30	$60,087	5.0%	N/A	$0.93	0.77	1
Idaho	Grocery	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,932	12	$59	10%	39%	$0.00	0.50	0.50
Idaho	Grocery	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,504	25	$1,580	45%	49%	$0.06	3	3
Idaho	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	317	25	$760	25%	85%	$0.23	0.44	0.44
Idaho	Grocery	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	772	20	$521	45%	61%	$0.07	1	1
Idaho	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	463	20	$91	45%	85%	$0.02	1	1
Idaho	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,164	25	$2,820	15%	84%	$0.09	2	2
Idaho	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	618	25	$870	15%	90%	$0.14	0.53	0.53
Idaho	Grocery	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Grocery	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	65%	.	0.00	0.00
Idaho	Grocery	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,220	7	$591	90%	85%	$0.03	15	15
Idaho	Grocery	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	338	10	$526	35%	68%	$0.22	0.46	0.46
Idaho	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	3,963	25	$2	15%	90%	$0.00	3	3
Idaho	Grocery	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,371	25	$87	15%	61%	$0.00	1	1
Idaho	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	466	15	$810	100%	N/A	$0.20	0.00	0.00
Idaho	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,281	15	$1,621	100%	N/A	$0.15	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	630	15	$1,050	80%	98%	$0.19	1	1
Idaho	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,236	15	$525	75%	75%	$0.05	1	1
Idaho	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	908	14	$5,160	5.0%	94%	$0.68	0.09	0.09
Idaho	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	556	12	$5,450	10%	75%	$1.28	0.09	0.09
Idaho	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	630	40	$30,390	2.0%	**%	$4.20	0.00	0.00
Idaho	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,230	30	$30,865	5.0%	N/A	$0.85	0.28	0.28
Idaho	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	152	25	$760	75%	85%	$0.49	0.15	0.15
Idaho	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	222	20	$91	45%	85%	$0.04	0.13	0.13
Idaho	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	296	25	$870	35%	90%	$0.29	0.15	0.15
Idaho	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,902	25	$2	80%	90%	$0.00	2	2
Idaho	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	2	2
Idaho	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	682	8	$372	75%	70%	$0.09	63	63
Idaho	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	567	15	$766	62%	90%	$0.16	55	55
Idaho	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	286	8	$548	45%	55%	$0.32	9	9
Idaho	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	46	13	$70	75%	95%	$0.19	5	5
Idaho	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	22	22
Idaho	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.78	0.78
Idaho	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	682	8	$372	75%	70%	$0.09	20	20
Idaho	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	567	15	$766	62%	90%	$0.16	17	17
Idaho	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	286	8	$548	45%	55%	$0.32	3	3
Idaho	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	46	13	$70	75%	95%	$0.19	1	1
Idaho	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	6	6
Idaho	Grocery	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	461	10	$249	5.0%	95%	$0.08	3	3
Idaho	Grocery	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,214	8	$3,000	5.0%	96%	$0.12	30	30
Idaho	Grocery	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,161	8	$2,250	5.0%	96%	$0.12	22	22

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	2,502	6	$928	85%	80%	$0.05	259	259
Idaho	Grocery	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	1,535	6	$779	85%	80%	$0.09	159	159
Idaho	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,450	13	$-58.185671	100%	N/A	$-0.02	0.00	0.00
Idaho	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,959	13	$829	100%	N/A	$0.05	147	160
Idaho	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,185	13	$14,310	25%	N/A	$0.57	61	66
Idaho	Grocery	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,100	8	$548	5.0%	55%	$0.04	7	7
Idaho	Grocery	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	623	15	$200	100%	N/A	$0.12	0.00	0.00
Idaho	Grocery	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	767	15	$842	95%	N/A	$0.00	43	43
Idaho	Grocery	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	684	13	$6,120	50%	N/A	$0.80	1	1
Idaho	Grocery	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	435	9	$2	25%	N/A	$-0.17	0.00	0.00
Idaho	Grocery	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	217	15	$3,878	100%	N/A	$1.06	0.00	0.00
Idaho	Grocery	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	288	8	$548	5.0%	55%	$0.32	1	1
Idaho	Grocery	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	260	11	$101	95%	50%	$0.05	21	21
Idaho	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	52	13	$44	95%	98%	$0.11	8	8
Idaho	Grocery	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	504	10	$249	5.0%	95%	$0.07	1	1
Idaho	Grocery	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,606	8	$3,000	5.0%	96%	$0.14	9	9
Idaho	Grocery	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,705	8	$2,250	5.0%	96%	$0.14	6	6
Idaho	Grocery	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	1,936	6	$473	85%	80%	$0.01	70	70
Idaho	Grocery	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	873	6	$340	85%	80%	$0.06	31	31

Table C-2.2. Commercial Measure Details

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Idaho	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	52	13	$44	95%	98%	$0.11	2	2
Idaho	Grocery	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,523	13	$7,272	100%	N/A	$0.36	127	128
Idaho	Grocery	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,296	8	$548	5.0%	55%	$0.04	3	3
Idaho	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,603	4	$36	85%	N/A	$-0.02	0.00	79
Idaho	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,028	1	$24	100%	N/A	$0.01	0.00	0.00
Idaho	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,109	1	$18	100%	N/A	$-0.02	0.00	0.00
Idaho	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,641	12	$455	15%	N/A	$-0.00	6	58
Idaho	Grocery	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	321	8	$548	5.0%	55%	$0.28	0.49	0.49
Idaho	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.65	10%	90%	$0.05	0.03	0.03
Idaho	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	25	4	$0.00	10%	45%	$0.00	0.20	0.20
Idaho	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	3	3
Idaho	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	106	106
Idaho	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.45	5.0%	86%	$0.02	0.06	0.06
Idaho	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	5	5
Idaho	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.65	10%	90%	$0.05	0.01	0.01
Idaho	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	25	4	$0.00	10%	45%	$0.00	0.07	0.07
Idaho	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	1	1
Idaho	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	34	34
Idaho	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.45	5.0%	86%	$0.02	0.02	0.02
Idaho	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	1	1
Idaho	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	52	6	$56	100%	N/A	$0.22	0.26	0.26
Idaho	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	52	6	$56	100%	N/A	$0.22	0.13	0.13
Idaho	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	21	6	$2	100%	N/A	$0.02	0.33	0.33
Idaho	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	21	6	$2	100%	N/A	$0.02	0.00	0.00

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Idaho	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	2,934	8	$252	90%	45%	$0.01	151	151
Idaho	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	4,867	15	$1,182	100%	77%	$0.03	474	474
Idaho	Grocery	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	3,363	15	$364	95%	95%	$0.01	386	386
Idaho	Grocery	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	250	15	$164	95%	95%	$0.08	28	28
Idaho	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	3,292	10	$2,731	95%	80%	$0.12	318	318
Idaho	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	4,470	10	$3,702	95%	80%	$0.12	432	432
Idaho	Grocery	Refrigeration	Compressor VSD Retrofit	VSD Compressor	Constant Speed Compressor	Per Building	Existing	7,514	13	$1,334	60%	77%	$0.02	347	347
Idaho	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	872	10	$3,300	95%	68%	$0.54	53	53
Idaho	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	484	8	$47	50%	95%	$0.02	29	29
Idaho	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	Existing	2,077	15	$706	50%	81%	$0.04	78	78
Idaho	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	477	12	$452	95%	77%	$0.12	44	44
Idaho	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	1,210	5	$192	95%	85%	$0.04	90	90
Idaho	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	4,080	3	$640	95%	85%	$0.06	300	300
Idaho	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	375	12	$-88.211516	95%	81%	$-0.03	36	36
Idaho	Grocery	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	1,844	13	$263	80%	90%	$0.02	114	114
Idaho	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	683	4	$493	95%	20%	$0.20	10	10
Idaho	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	7,890	15	$1,956	75%	95%	$0.03	473	473
Idaho	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	93	10	$17	100%	85%	$0.03	10	10
Idaho	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	491	15	$545	75%	95%	$0.13	44	44
Idaho	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	387	15	$349	75%	95%	$0.10	21	21
Idaho	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	2,934	8	$252	90%	45%	$0.01	50	50
Idaho	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	4,867	15	$1,182	100%	77%	$0.03	143	143
Idaho	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	3,292	10	$2,731	95%	80%	$0.12	101	101
Idaho	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	4,470	10	$3,702	95%	80%	$0.12	138	138
Idaho	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	872	10	$3,300	95%	68%	$0.54	19	19
Idaho	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	484	8	$47	50%	95%	$0.02	9	9

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	New	2,077	15	$706	50%	81%	$0.04	26	26
Idaho	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	477	12	$452	95%	77%	$0.12	14	14
Idaho	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	1,210	5	$192	95%	85%	$0.04	34	34
Idaho	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	2,040	3	$248	80%	90%	$0.04	51	51
Idaho	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	375	12	$-88.211516	95%	81%	$-0.03	11	11
Idaho	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	683	4	$493	95%	20%	$0.20	4	4
Idaho	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	7,890	15	$1,956	75%	95%	$0.03	168	168
Idaho	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	93	10	$17	100%	85%	$0.03	3	3
Idaho	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	491	15	$545	75%	95%	$0.13	13	13
Idaho	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	387	15	$349	75%	95%	$0.10	7	7
Idaho	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	164	20	$447	100%	N/A	$0.27	0.00	0.00
Idaho	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	184	20	$600	100%	N/A	$0.33	6	8
Idaho	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	144	20	$35	100%	N/A	$0.02	0.00	0.00
Idaho	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	46	20	$16	100%	N/A	$0.03	0.00	0.00
Idaho	Grocery	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,128	20	$119	8.8%	100%	$0.01	12	12
Idaho	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	164	20	$447	100%	N/A	$0.27	0.00	0.00
Idaho	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	184	20	$600	100%	N/A	$0.33	6	6
Idaho	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	144	20	$35	100%	N/A	$0.02	0.00	0.00
Idaho	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	46	20	$16	100%	N/A	$0.03	0.00	0.00
Idaho	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,788	15	$525	75%	75%	$0.03	39	39
Idaho	Grocery	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	447	18	$720	45%	65%	$0.17	4	4
Idaho	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,682	14	$5,160	5.0%	94%	$0.23	4	4
Idaho	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	804	12	$5,450	10%	75%	$0.88	2	2
Idaho	Grocery	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,788	12	$59	10%	39%	$0.00	2	2
Idaho	Grocery	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,517	25	$1,580	45%	49%	$0.04	28	28
Idaho	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	445	25	$760	25%	85%	$0.17	3	3
Idaho	Grocery	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	536	20	$521	45%	61%	$0.10	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	321	20	$91	45%	85%	$0.03	4	4
Idaho	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,299	25	$2,820	15%	84%	$0.06	18	18
Idaho	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	800	25	$870	15%	90%	$0.11	3	3
Idaho	Grocery	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Grocery	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	65%	.	0.00	0.00
Idaho	Grocery	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,235	7	$591	90%	85%	$0.05	56	56
Idaho	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,750	25	$2	15%	90%	$0.00	11	11
Idaho	Grocery	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,340	25	$87	15%	61%	$0.00	6	6
Idaho	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	666	15	$525	75%	75%	$0.09	4	4
Idaho	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	999	14	$5,160	5.0%	94%	$0.62	0.53	0.53
Idaho	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	299	12	$5,450	10%	75%	$2.37	0.26	0.26
Idaho	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	166	25	$760	75%	85%	$0.45	0.90	0.90
Idaho	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	119	20	$91	45%	85%	$0.08	0.38	0.38
Idaho	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	298	25	$870	35%	90%	$0.29	0.78	0.78
Idaho	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,024	25	$2	80%	90%	$0.00	6	6
Idaho	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	59	10	$8	100%	N/A	$0.02	4	4
Idaho	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	59	10	$8	100%	N/A	$0.02	1	1
Idaho	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,610	10	$367	5.0%	90%	$0.02	20	20
Idaho	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,400	95%	65%	$0.23	121	121
Idaho	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	133	15	$19	95%	76%	$0.02	15	15
Idaho	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	3,327	20	$334	55%	45%	$0.01	135	135
Idaho	Grocery	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
Idaho	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	2,562	10	$367	5.0%	90%	$0.02	6	6
Idaho	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,400	95%	65%	$0.23	35	35
Idaho	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	130	15	$19	95%	76%	$0.02	4	4

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	3,266	20	$334	55%	45%	$0.01	31	31
Idaho	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	590	15	$322	75%	N/A	$0.09	0.00	0.41
Idaho	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	583	15	$192	75%	N/A	$0.06	0.00	0.00
Idaho	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	590	15	$322	75%	N/A	$0.09	0.00	0.09
Idaho	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	583	15	$192	75%	N/A	$0.06	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	49	10	$833	75%	94%	$2.41	0.17	0.17
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	45%	35%	$0.34	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	45%	35%	$0.08	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	45%	55%	$0.39	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	45%	55%	$0.37	0.01	0.01
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	86	12	$49	40%	95%	$0.06	0.15	0.18
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	79	12	$49	40%	94%	$0.07	0.13	0.17
Idaho	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	198	25	$800	2.5%	100%	$0.39	0.02	0.02
Idaho	Grocery	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	9	12	$25	80%	90%	$0.33	0.03	0.03
Idaho	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	15	9	$8	95%	25%	$0.06	0.01	0.01
Idaho	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.06	1	1
Idaho	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	24	10	$117	75%	95%	$0.66	0.08	0.08
Idaho	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	112	10	$2,730	55%	94%	$3.46	0.18	0.18
Idaho	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	49	10	$833	75%	94%	$2.43	0.04	0.04

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Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	45%	35%	$0.34	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	45%	35%	$0.08	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	45%	55%	$0.39	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	45%	55%	$0.37	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$47	40%	95%	$0.06	0.03	0.03
Idaho	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	76	12	$47	40%	94%	$0.07	0.03	0.03
Idaho	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	196	25	$640	2.5%	100%	$0.32	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	15	9	$0.06	95%	25%	$-0.02	0.00	0.00
Idaho	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.06	0.30	0.30
Idaho	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	24	10	$117	75%	95%	$0.66	0.02	0.02
Idaho	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	111	10	$2,730	55%	94%	$3.49	0.04	0.04
Idaho	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	537	15	$1,655	75%	N/A	$0.40	16	21
Idaho	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	32	15	$72	100%	N/A	$0.26	0.00	0.00
Idaho	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	537	15	$1,655	75%	N/A	$0.40	6	6
Idaho	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	32	15	$72	100%	N/A	$0.26	0.00	0.00
Idaho	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	50	10	$833	50%	94%	$2.35	1	1
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.34	0.00	0.01
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.04	0.04

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Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.39	0.00	0.04
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.31	0.36
Idaho	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	86	12	$49	50%	95%	$0.06	2	2
Idaho	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	79	12	$49	50%	95%	$0.07	2	2
Idaho	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	202	25	$800	2.5%	100%	$0.39	0.30	0.30
Idaho	Grocery	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.33	0.43	0.43
Idaho	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	16	9	$8	95%	25%	$0.04	0.25	0.25
Idaho	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.06	14	14
Idaho	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	25	10	$117	75%	95%	$0.64	1	1
Idaho	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	115	10	$2,730	55%	94%	$3.38	2	2
Idaho	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	49	10	$833	50%	94%	$2.42	0.42	0.42
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.34	0.00	0.00
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.01	0.01
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.39	0.00	0.00
Idaho	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.09	0.09
Idaho	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$47	50%	95%	$0.06	0.71	0.71
Idaho	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	76	12	$47	50%	95%	$0.07	0.65	0.65
Idaho	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	196	25	$640	2.5%	100%	$0.32	0.03	0.03

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	15	9	$0.06	95%	25%	$-0.02	0.07	0.07
Idaho	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.06	4	4
Idaho	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	24	10	$117	75%	95%	$0.66	0.32	0.32
Idaho	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	112	10	$2,730	55%	94%	$3.48	0.68	0.68
Idaho	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	493	4	$56	100%	N/A	$0.03	11	12
Idaho	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	761	4	$56	95%	30%	$0.02	30	30
Idaho	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	493	4	$56	100%	N/A	$0.03	1	1
Idaho	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	761	4	$56	95%	30%	$0.02	10	10
Idaho	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	34	12	$5	90%	90%	$0.02	0.05	0.05
Idaho	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	3	12	$8	25%	90%	$0.34	0.00	0.00
Idaho	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	39	12	$9	95%	85%	$0.03	0.06	0.06
Idaho	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	69	12	$39	7.0%	55%	$0.07	0.00	0.00
Idaho	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	112	12	$72	15%	21%	$0.08	0.00	0.00
Idaho	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	195	12	$109	11%	75%	$0.07	0.03	0.03
Idaho	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	34	12	$5	90%	90%	$0.02	0.01	0.01
Idaho	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	3	12	$8	25%	90%	$0.34	0.00	0.00
Idaho	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	39	12	$9	95%	85%	$0.03	0.02	0.02
Idaho	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	69	12	$39	7.0%	55%	$0.07	0.00	0.00
Idaho	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	112	12	$72	15%	21%	$0.08	0.00	0.00
Idaho	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	195	12	$109	11%	75%	$0.07	0.00	0.00
Idaho	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	439	15	$1,000	5.0%	94%	$0.26	0.34	0.34
Idaho	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	54	5	$681	95%	81%	$2.90	0.69	0.69
Idaho	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	332	10	$3,145	25%	70%	$1.36	0.94	0.94
Idaho	Health	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	219	15	$7,303	45%	90%	$3.82	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	992	20	$1,296	100%	N/A	$0.13	6	8
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	165	20	$216	100%	N/A	$0.13	0.00	0.00
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	606	20	$792	100%	N/A	$0.13	0.00	0.00
Idaho	Health	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,317	15	$12,160	15%	68%	$0.31	2	2
Idaho	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	439	15	$1,400	15%	98%	$0.37	0.98	0.98
Idaho	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	351	7	$388	10%	94%	$0.20	0.49	0.49
Idaho	Health	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	614	15	$34	65%	35%	$0.01	2	2
Idaho	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	175	13	$281	75%	65%	$0.20	1	1
Idaho	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	439	15	$700	75%	75%	$0.05	3	3
Idaho	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	197	12	$5,450	2.5%	75%	$1.05	0.04	0.04
Idaho	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	439	40	$40,520	2.0%	**%	$8.05	0.00	0.00
Idaho	Health	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	219	12	$103	10%	39%	$0.01	0.11	0.11
Idaho	Health	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	7	25	$2,106	45%	64%	$0.17	0.02	0.02
Idaho	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$1,013	25%	85%	$0.37	0.00	0.00
Idaho	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$3,760	15%	76%	.	0.00	0.00
Idaho	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$1,160	15%	90%	.	0.00	0.00
Idaho	Health	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$966	10%	85%	.	0.00	0.00
Idaho	Health	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,243	10%	59%	.	0.00	0.00
Idaho	Health	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (ID State Code)	No Insulation	Per Building	Existing	65	15	$82	65%	45%	$0.14	0.25	0.25
Idaho	Health	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	549	7	$788	90%	85%	$0.08	5	5
Idaho	Health	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	512	10	$914	35%	68%	$0.26	1	1
Idaho	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	675	25	$3	15%	90%	$0.00	1	1
Idaho	Health	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	574	25	$151	15%	62%	$0.01	0.61	0.61
Idaho	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	210	15	$533	5.0%	94%	$0.29	0.04	0.04

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	26	5	$681	95%	81%	$6.05	0.11	0.11
Idaho	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	159	10	$2,831	25%	70%	$2.55	0.14	0.14
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	559	20	$1,166	100%	N/A	$0.21	2	2
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	93	20	$194	100%	N/A	$0.21	0.00	0.00
Idaho	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	341	20	$713	100%	N/A	$0.21	0.00	0.00
Idaho	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	210	15	$1,400	15%	98%	$0.76	0.14	0.14
Idaho	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	168	7	$350	10%	94%	$0.38	0.08	0.08
Idaho	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	84	13	$253	75%	65%	$0.37	0.19	0.19
Idaho	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	210	15	$700	75%	75%	$0.08	0.54	0.54
Idaho	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	94	12	$5,450	2.5%	75%	$1.63	0.00	0.00
Idaho	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	210	40	$40,520	2.0%	**%	$16.80	0.00	0.00
Idaho	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	0.73	25	$1,013	75%	85%	$0.52	0.00	0.00
Idaho	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	323	25	$3	80%	90%	$0.00	0.85	0.85
Idaho	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	290	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	557	15	$318	100%	N/A	$0.07	0.00	0.00
Idaho	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	3,746	15	$-6840.0335	35%	N/A	$-0.28	10	13
Idaho	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	164	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	314	15	$254	100%	N/A	$0.09	0.00	0.00
Idaho	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	2,116	15	$-5110.0001	35%	N/A	$-0.38	2	3

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	603	15	$1,000	5.0%	94%	$0.19	3	3
Idaho	Health	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,811	15	$12,160	15%	68%	$0.28	20	20
Idaho	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	603	15	$1,400	15%	98%	$0.27	9	9
Idaho	Health	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	905	10	$2,268	10%	30%	$0.36	2	2
Idaho	Health	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	603	5	$640	95%	72%	$0.25	43	43
Idaho	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,509	15	$8,333	50%	94%	$0.63	68	68
Idaho	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	603	15	$700	75%	75%	$0.05	29	29
Idaho	Health	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	150	18	$960	45%	65%	$0.24	3	3
Idaho	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	271	12	$5,450	2.5%	75%	$0.95	0.40	0.40
Idaho	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	603	40	$40,520	2.0%	**%	$5.85	0.00	0.00
Idaho	Health	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	301	12	$103	10%	39%	$0.01	0.93	0.93
Idaho	Health	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	9	25	$2,106	45%	64%	$0.17	0.22	0.22
Idaho	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2	25	$1,013	25%	85%	$0.37	0.03	0.03
Idaho	Health	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	181	20	$695	45%	61%	$0.14	3	3
Idaho	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	108	20	$122	45%	85%	$0.04	3	3
Idaho	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$3,760	15%	76%	.	0.00	0.00
Idaho	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$1,160	15%	90%	.	0.00	0.00
Idaho	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$966	10%	85%	.	0.00	0.00
Idaho	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,243	10%	59%	.	0.00	0.00
Idaho	Health	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	754	7	$788	90%	85%	$0.07	45	45
Idaho	Health	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	512	10	$914	35%	68%	$0.26	8	8
Idaho	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	929	25	$3	15%	90%	$0.00	8	8
Idaho	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	790	25	$151	15%	62%	$0.01	5	5
Idaho	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	318	15	$533	5.0%	94%	$0.19	0.51	0.51
Idaho	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	318	15	$1,400	15%	98%	$0.51	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	796	15	$8,333	50%	94%	$1.20	12	12
Idaho	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	318	15	$700	75%	75%	$0.07	5	5
Idaho	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	143	12	$5,450	2.5%	75%	$1.47	0.07	0.07
Idaho	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	318	40	$40,520	2.0%	**%	$11.10	0.00	0.00
Idaho	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$1,013	75%	85%	$0.52	0.01	0.01
Idaho	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	57	20	$122	45%	85%	$0.06	0.46	0.46
Idaho	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	489	25	$3	80%	90%	$0.00	8	8
Idaho	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	11	6	$0.24	100%	N/A	$0.00	1	1
Idaho	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	11	6	$0.24	100%	N/A	$0.00	0.56	0.56
Idaho	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	66	4	$75	100%	N/A	$0.32	0.53	0.53
Idaho	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	66	4	$75	100%	N/A	$0.32	1	1
Idaho	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.54	100%	N/A	$0.01	0.00	0.00
Idaho	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	10	20	$0.27	100%	N/A	$0.00	0.00	0.01
Idaho	Health	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	84	20	$10	8.8%	100%	$0.01	1	1
Idaho	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.54	100%	N/A	$0.01	0.00	0.00
Idaho	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	10	20	$0.27	100%	N/A	$0.00	0.00	0.01
Idaho	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	1,853	15	$1,300	100%	N/A	$0.08	4	5
Idaho	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	652	15	$1,000	5.0%	94%	$0.18	0.19	0.19
Idaho	Health	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	9,260	15	$12,160	15%	68%	$0.15	5	5
Idaho	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	652	15	$1,400	15%	98%	$0.25	0.57	0.57
Idaho	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,086	15	$700	75%	75%	$0.03	10	10
Idaho	Health	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	771	18	$960	45%	65%	$0.13	1	1
Idaho	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,650	14	$6,880	5.0%	94%	$0.22	0.96	0.96
Idaho	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,389	12	$5,450	2.5%	75%	$0.51	0.14	0.14

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	652	40	$40,520	2.0%	**%	$5.41	0.00	0.00
Idaho	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	6,871	30	$80,581	5.0%	N/A	$1.06	0.23	0.32
Idaho	Health	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,315	12	$103	10%	39%	$0.01	0.50	0.50
Idaho	Health	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,826	25	$2,106	45%	64%	$0.07	4	4
Idaho	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	605	25	$1,013	25%	85%	$0.16	0.69	0.69
Idaho	Health	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	926	20	$695	45%	61%	$0.08	1	1
Idaho	Health	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	555	20	$122	45%	85%	$0.02	1	1
Idaho	Health	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,868	25	$3,760	15%	76%	$0.05	4	4
Idaho	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	1,335	25	$1,160	15%	90%	$0.08	0.93	0.93
Idaho	Health	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$966	10%	85%	.	0.00	0.00
Idaho	Health	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,243	10%	59%	.	0.00	0.00
Idaho	Health	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,858	7	$788	90%	85%	$0.04	15	15
Idaho	Health	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	512	10	$914	35%	68%	$0.26	0.56	0.56
Idaho	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	4,748	25	$3	15%	90%	$0.00	2	2
Idaho	Health	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,039	25	$151	15%	62%	$0.00	1	1
Idaho	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	1,259	15	$1,040	100%	N/A	$0.09	1	1
Idaho	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	420	15	$533	5.0%	94%	$0.15	0.03	0.03
Idaho	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	420	15	$1,400	15%	98%	$0.38	0.12	0.12
Idaho	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,988	15	$700	75%	75%	$0.04	2	2
Idaho	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,351	14	$6,880	5.0%	94%	$0.35	0.20	0.20
Idaho	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	894	12	$5,450	2.5%	75%	$0.79	0.03	0.03
Idaho	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	420	40	$40,520	2.0%	**%	$8.41	0.00	0.00
Idaho	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	4,598	30	$41,443	5.0%	N/A	$0.81	0.16	0.16
Idaho	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	389	25	$1,013	75%	85%	$0.25	0.34	0.34
Idaho	Health	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	357	20	$122	45%	85%	$0.03	0.18	0.18
Idaho	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	860	25	$1,160	35%	90%	$0.13	0.37	0.37

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	3,058	25	$3	80%	90%	$0.00	3	3
Idaho	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	374	8	$104	5.0%	95%	$0.05	2	2
Idaho	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	502	8	$430	75%	70%	$0.14	43	43
Idaho	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	417	15	$564	62%	90%	$0.16	38	38
Idaho	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	186	8	$731	90%	36%	$0.65	7	7
Idaho	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	3	13	$4	75%	95%	$0.19	0.39	0.39
Idaho	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	3,644	17	$2,476	5.0%	95%	$0.07	28	28
Idaho	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	374	8	$104	5.0%	95%	$0.05	0.98	0.98
Idaho	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	502	8	$430	75%	70%	$0.14	14	14
Idaho	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	417	15	$564	62%	90%	$0.16	12	12
Idaho	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	186	8	$731	90%	36%	$0.65	2	2
Idaho	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	3	13	$4	75%	95%	$0.19	0.12	0.12
Idaho	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	3,644	17	$2,476	5.0%	95%	$0.07	8	8
Idaho	Health	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	416	10	$333	25%	95%	$0.11	15	15
Idaho	Health	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,289	8	$4,000	15%	51%	$0.20	39	39
Idaho	Health	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,466	8	$3,000	15%	51%	$0.20	29	29
Idaho	Health	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	95	6	$35	15%	80%	$0.05	1	1
Idaho	Health	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	58	6	$29	10%	80%	$0.09	0.73	0.73
Idaho	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	507	13	$1,527	100%	N/A	$0.38	0.00	0.00
Idaho	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	659	13	$-539.97111	100%	N/A	$-0.13	0.00	0.00
Idaho	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,777	13	$1,827	0.0%	N/A	$0.15	0.00	0.00
Idaho	Health	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,674	8	$731	75%	36%	$0.07	69	69
Idaho	Health	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	81	15	$44	100%	N/A	$0.58	0.00	0.00

Table C-2.2. Commercial Measure Details

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Idaho	Health	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	103	15	$149	95%	N/A	$-0.63	6	6
Idaho	Health	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	91	16	$1,016	50%	N/A	$-0.83	0.25	0.25
Idaho	Health	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	57	11	$11	25%	N/A	$-1.14	0.00	0.00
Idaho	Health	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	27	15	$648	100%	N/A	$-4.24	0.00	0.00
Idaho	Health	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	36	8	$731	75%	36%	$3.31	1	1
Idaho	Health	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	581	11	$226	95%	50%	$0.05	46	46
Idaho	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	116	13	$99	95%	98%	$0.11	18	18
Idaho	Health	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	377	10	$333	25%	95%	$0.13	4	4
Idaho	Health	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,291	8	$4,000	15%	51%	$0.29	9	9
Idaho	Health	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,718	8	$3,000	15%	51%	$0.29	6	6
Idaho	Health	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	73	6	$17	15%	80%	$0.01	0.47	0.47
Idaho	Health	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	33	6	$12	15%	80%	$0.06	0.21	0.21
Idaho	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	116	13	$99	95%	98%	$0.11	5	5
Idaho	Health	Lighting Interior Other	Lighting Package, High Efficiency	5% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	944	13	$1,422	100%	N/A	$0.19	47	47
Idaho	Health	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,520	8	$731	75%	36%	$0.08	21	21
Idaho	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,955	4	$133	85%	N/A	$-0.00	0.00	7
Idaho	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	12,204	1	$88	100%	N/A	$0.00	0.00	0.00
Idaho	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,134	1	$69	100%	N/A	$-0.01	0.00	0.00
Idaho	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	14,072	12	$1,653	15%	N/A	$0.01	12	63

Table C-2.2. Commercial Measure Details

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Idaho	Health	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	491	8	$731	75%	36%	$0.25	12	12
Idaho	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	10	7	$2	10%	90%	$0.05	0.15	0.15
Idaho	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	17	4	$0.00	10%	45%	$0.00	0.13	0.13
Idaho	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	91	10	$0.45	95%	75%	$0.00	10	10
Idaho	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	41	10	$29	95%	86%	$0.10	5	5
Idaho	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	34	4	$0.60	5.0%	86%	$0.00	0.24	0.24
Idaho	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	266	4	$53	60%	90%	$0.06	23	23
Idaho	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	10	7	$2	10%	90%	$0.05	0.05	0.05
Idaho	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	17	4	$0.00	10%	45%	$0.00	0.04	0.04
Idaho	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	91	10	$0.45	95%	75%	$0.00	3	3
Idaho	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	41	10	$29	95%	86%	$0.10	1	1
Idaho	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	34	4	$0.60	5.0%	86%	$0.00	0.08	0.08
Idaho	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	266	4	$53	60%	90%	$0.06	8	8
Idaho	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	35	6	$39	100%	N/A	$0.22	0.17	0.17
Idaho	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	35	6	$39	100%	N/A	$0.22	0.08	0.08
Idaho	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	165	6	$19	100%	N/A	$0.02	2	2
Idaho	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	165	6	$19	100%	N/A	$0.02	0.00	0.00
Idaho	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	111	8	$9	15%	45%	$0.01	0.38	0.38
Idaho	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	184	15	$44	5.0%	77%	$0.03	0.35	0.35
Idaho	Health	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	127	15	$13	5.0%	95%	$0.01	0.30	0.30
Idaho	Health	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	9	15	$6	5.0%	95%	$0.08	0.02	0.02
Idaho	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	125	10	$103	2.5%	80%	$0.12	0.12	0.12
Idaho	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	169	10	$140	2.5%	80%	$0.12	0.17	0.17
Idaho	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	33	10	$3,300	5.0%	68%	$14.24	0.05	0.05
Idaho	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	18	8	$1	5.0%	95%	$0.02	0.04	0.04
Idaho	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	13	12	$12	95%	77%	$0.12	0.50	0.50
Idaho	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	155	3	$24	10%	85%	$0.06	0.66	0.66

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Idaho	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	10	12	$-2.5142299	95%	81%	$-0.03	0.41	0.41
Idaho	Health	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	70	13	$10	5.0%	90%	$0.02	0.15	0.15
Idaho	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	19	4	$14	15%	20%	$0.20	0.02	0.02
Idaho	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	3	10	$0.66	1.0%	85%	$0.03	0.00	0.00
Idaho	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	18	15	$20	2.5%	95%	$0.13	0.02	0.02
Idaho	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	11	15	$9	2.5%	95%	$0.10	0.01	0.01
Idaho	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	111	8	$9	15%	45%	$0.01	0.12	0.12
Idaho	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	184	15	$44	5.0%	77%	$0.03	0.10	0.10
Idaho	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	125	10	$103	2.5%	80%	$0.12	0.04	0.04
Idaho	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	169	10	$140	2.5%	80%	$0.12	0.05	0.05
Idaho	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	33	10	$3,300	5.0%	68%	$14.24	0.01	0.01
Idaho	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	18	8	$1	5.0%	95%	$0.02	0.01	0.01
Idaho	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	13	12	$12	95%	77%	$0.12	0.16	0.16
Idaho	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	77	3	$9	5.0%	90%	$0.04	0.06	0.06
Idaho	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	10	12	$-2.5142299	95%	81%	$-0.03	0.13	0.13
Idaho	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	19	4	$14	15%	20%	$0.20	0.00	0.00
Idaho	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	3	10	$0.66	1.0%	85%	$0.03	0.00	0.00
Idaho	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	18	15	$20	2.5%	95%	$0.13	0.00	0.00
Idaho	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	11	15	$9	2.5%	95%	$0.10	0.00	0.00
Idaho	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	127	20	$347	100%	N/A	$0.27	0.00	0.00
Idaho	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	143	20	$465	100%	N/A	$0.33	4	5
Idaho	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	112	20	$27	100%	N/A	$0.02	0.00	0.00
Idaho	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	35	20	$12	100%	N/A	$0.03	0.00	0.00
Idaho	Health	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	875	20	$92	8.8%	100%	$0.01	9	9
Idaho	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	127	20	$347	100%	N/A	$0.27	0.00	0.00
Idaho	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	143	20	$465	100%	N/A	$0.33	4	4
Idaho	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	112	20	$27	100%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	35	20	$12	100%	N/A	$0.03	0.00	0.00
Idaho	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	46	9	$6	100%	N/A	$0.02	6	6
Idaho	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	161	4	$605	10%	50%	$1.05	1	1
Idaho	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	46	9	$6	100%	N/A	$0.02	2	2
Idaho	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	160	4	$605	10%	50%	$1.05	0.35	0.35
Idaho	Health	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	11,112	15	$12,160	15%	68%	$0.11	36	36
Idaho	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,704	15	$700	75%	75%	$0.02	65	65
Idaho	Health	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	926	18	$960	45%	65%	$0.10	8	8
Idaho	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,556	14	$6,880	5.0%	94%	$0.15	7	7
Idaho	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,666	12	$5,450	2.5%	75%	$0.38	0.91	0.91
Idaho	Health	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,704	12	$103	10%	39%	$0.00	4	4
Idaho	Health	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,311	25	$2,106	45%	64%	$0.05	36	36
Idaho	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	923	25	$1,013	25%	85%	$0.11	5	5
Idaho	Health	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	1,111	20	$695	45%	61%	$0.06	8	8
Idaho	Health	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	666	20	$122	45%	85%	$0.02	7	7
Idaho	Health	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,906	25	$3,760	15%	76%	$0.04	28	28
Idaho	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	1,657	25	$1,160	15%	90%	$0.07	6	6
Idaho	Health	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$966	10%	85%	.	0.00	0.00
Idaho	Health	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,243	10%	59%	.	0.00	0.00
Idaho	Health	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,630	7	$788	90%	85%	$0.03	95	95
Idaho	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	5,698	25	$3	15%	90%	$0.00	18	18
Idaho	Health	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,847	25	$151	15%	62%	$0.00	10	10
Idaho	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,648	15	$700	75%	75%	$0.03	14	14
Idaho	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	3,972	14	$6,880	5.0%	94%	$0.21	1	1
Idaho	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,191	12	$5,450	2.5%	75%	$0.55	0.21	0.21
Idaho	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	660	25	$1,013	75%	85%	$0.15	2	2
Idaho	Health	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	476	20	$122	45%	85%	$0.02	1	1
Idaho	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	1,185	25	$1,160	35%	90%	$0.10	2	2
Idaho	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	4,073	25	$3	80%	90%	$0.00	22	22

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Idaho	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	103	10	$14	100%	N/A	$0.02	7	7
Idaho	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	103	10	$14	100%	N/A	$0.02	2	2
Idaho	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	5,136	10	$490	5.0%	90%	$0.01	38	38
Idaho	Health	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	7,704	15	$12,160	15%	68%	$0.18	128	128
Idaho	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	130	18	$297	95%	85%	$0.24	17	17
Idaho	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	261	15	$26	95%	76%	$0.01	30	30
Idaho	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	6,548	20	$445	55%	45%	$0.01	256	256
Idaho	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	1,348	15	$1,460	8.0%	77%	$0.12	12	12
Idaho	Health	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	70	7	$20	65%	25%	$0.05	0.00	0.00
Idaho	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	410	18	$1,705	65%	59%	$0.44	26	26
Idaho	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	4,400	10	$490	5.0%	90%	$0.02	10	10
Idaho	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	130	18	$297	95%	85%	$0.24	5	5
Idaho	Health	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	3,000	50	$10,000	24%	98%	$0.28	27	27
Idaho	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	224	15	$26	95%	76%	$0.01	7	7
Idaho	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	5,610	20	$445	55%	45%	$0.01	51	51
Idaho	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	1,155	15	$1,460	8.0%	77%	$0.15	3	3
Idaho	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	352	18	$1,705	65%	59%	$0.51	6	6
Idaho	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	4,078	15	$1,128	75%	N/A	$0.04	0.03	1
Idaho	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	4,034	15	$674	75%	N/A	$0.03	0.00	0.00
Idaho	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	4,054	15	$1,128	75%	N/A	$0.04	0.02	0.40

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Idaho	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	4,010	15	$674	75%	N/A	$0.03	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$-0.22	0.05	0.06
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$-0.09	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$-0.39	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$-0.04	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$-0.05	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$-0.16	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$-0.02	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$-0.19	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$-0.06	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	342	10	$1,111	55%	94%	$0.46	0.45	0.45
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.36	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.40	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.37	0.00	0.00

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Idaho	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	143	12	$81	10%	95%	$0.07	0.03	0.04
Idaho	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	131	12	$81	10%	94%	$0.07	0.02	0.03
Idaho	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,368	25	$2,800	2.5%	100%	$0.20	0.08	0.08
Idaho	Health	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	68	12	$89	80%	70%	$0.17	0.09	0.09
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	108	9	$28	95%	25%	$0.01	0.06	0.06
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	64	4	$19	95%	83%	$0.05	0.13	0.13
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	134	10	$9	95%	73%	$-0.09	0.24	0.24
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	108	10	$23	95%	62%	$-0.07	0.16	0.16
Idaho	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	171	10	$392	75%	95%	$0.30	0.31	0.31
Idaho	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	780	10	$103	2.5%	94%	$0.02	0.04	0.04
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$-0.22	0.01	0.01
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$-0.09	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$-0.39	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$-0.04	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$-0.05	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$-0.16	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$-0.02	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$-0.19	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$-0.06	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	337	10	$1,111	55%	94%	$0.47	0.11	0.11
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.36	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.40	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.37	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	143	12	$81	10%	95%	$0.07	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	131	12	$81	10%	94%	$0.07	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,348	25	$2,240	2.5%	100%	$0.16	0.00	0.00
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	107	9	$0.20	95%	25%	$-0.03	0.01	0.01
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	64	4	$19	95%	83%	$0.05	0.03	0.03
Idaho	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	134	10	$9	95%	73%	$-0.09	0.06	0.06
Idaho	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	168	10	$392	75%	95%	$0.31	0.07	0.07
Idaho	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	768	10	$103	2.5%	94%	$0.02	0.01	0.01
Idaho	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	3,714	15	$5,794	75%	N/A	$0.20	77	83
Idaho	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	222	15	$253	100%	N/A	$0.13	0.00	0.00
Idaho	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	3,692	15	$5,794	75%	N/A	$0.20	35	36
Idaho	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	221	15	$253	100%	N/A	$0.13	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$-0.22	0.73	0.85
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$-0.09	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$-0.39	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$-0.04	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$-0.05	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$-0.16	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$-0.02	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$-0.19	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$-0.06	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	349	10	$1,111	75%	94%	$0.45	8	8
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.36	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.00	0.01
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.40	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.37	0.07	0.08
Idaho	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	143	12	$81	10%	95%	$0.07	0.42	0.49

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	131	12	$81	10%	95%	$0.07	0.38	0.45
Idaho	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,399	25	$2,800	2.5%	100%	$0.20	1	1
Idaho	Health	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	69	12	$89	80%	70%	$0.17	1	1
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	111	9	$28	95%	25%	$0.01	0.90	0.90
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	64	4	$19	95%	83%	$0.05	1	1
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	134	10	$9	95%	73%	$-0.09	3	3
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	108	10	$23	95%	62%	$-0.07	2	2
Idaho	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	174	10	$392	75%	95%	$0.29	4	4
Idaho	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	797	10	$103	2.5%	94%	$0.02	0.57	0.57
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$-0.22	0.21	0.21
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$-0.09	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$-0.39	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$-0.04	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$-0.05	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$-0.16	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$-0.02	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$-0.19	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$-0.06	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	338	10	$1,111	75%	94%	$0.47	2	2
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.36	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.40	0.00	0.00
Idaho	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.37	0.02	0.02
Idaho	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	143	12	$81	10%	95%	$0.07	0.12	0.12
Idaho	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	131	12	$81	10%	95%	$0.07	0.11	0.11
Idaho	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,352	25	$2,240	2.5%	100%	$0.16	0.12	0.12
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	107	9	$0.20	95%	25%	$-0.03	0.24	0.24
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	64	4	$19	95%	83%	$0.05	0.51	0.51
Idaho	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	134	10	$9	95%	73%	$-0.09	0.89	0.89
Idaho	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	169	10	$392	75%	95%	$0.31	1	1
Idaho	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	770	10	$103	2.5%	94%	$0.02	0.15	0.15
Idaho	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	6,208	4	$709	100%	N/A	$0.03	13	15
Idaho	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	9,578	4	$709	95%	30%	$0.02	35	35
Idaho	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	6,208	4	$709	100%	N/A	$0.03	2	2
Idaho	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	9,578	4	$709	95%	30%	$0.02	12	12
Idaho	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,564	15	$7,603	75%	94%	$0.34	4	4

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Idaho	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	320	5	$5,180	95%	81%	$3.78	0.61	0.61
Idaho	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,938	10	$23,917	25%	70%	$1.76	0.83	0.83
Idaho	Large Office	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	1,282	15	$55,530	45%	45%	$4.98	0.63	0.63
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	1,035	20	$1,670	100%	N/A	$0.16	0.00	0.00
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	2,229	20	$3,597	100%	N/A	$0.16	0.43	0.63
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	Existing	4,220	20	$13,192	75%	N/A	$0.32	2	3
Idaho	Large Office	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	7,693	15	$92,454	15%	68%	$1.38	1	1
Idaho	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,564	15	$8,946	80%	98%	$0.40	4	4
Idaho	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	2,051	7	$2,956	10%	94%	$0.26	0.41	0.41
Idaho	Large Office	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	3,590	15	$264	65%	35%	$0.01	1	1
Idaho	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	1,025	13	$2,140	75%	65%	$0.26	1	1
Idaho	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,564	15	$5,322	75%	75%	$0.24	2	2
Idaho	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,564	40	$58,922	2.0%	**%	$8.81	0.00	0.00
Idaho	Large Office	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,282	12	$987	10%	39%	$0.10	0.09	0.09
Idaho	Large Office	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	41	25	$13,461	45%	58%	$31.60	0.02	0.02
Idaho	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	8	25	$6,475	25%	85%	$70.98	0.00	0.00
Idaho	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	70%	.	0.00	0.00
Idaho	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Idaho	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Idaho	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	66%	.	0.00	0.00
Idaho	Large Office	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (ID State Code)	No Insulation	Per Building	Existing	384	15	$624	65%	45%	$0.19	0.21	0.21
Idaho	Large Office	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,205	7	$5,995	90%	85%	$0.34	4	4
Idaho	Large Office	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	3,550	10	$8,711	35%	68%	$0.35	1	1
Idaho	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	3,945	25	$34	15%	90%	$0.00	0.88	0.88
Idaho	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,356	25	$1,441	15%	71%	$0.04	0.58	0.58

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,671	15	$4,055	75%	94%	$0.28	0.97	0.97
Idaho	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	208	5	$5,180	95%	81%	$5.79	0.13	0.13
Idaho	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	1,263	10	$21,525	25%	70%	$2.44	0.17	0.17
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	757	20	$1,503	100%	N/A	$0.20	0.00	0.00
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	1,631	20	$3,237	100%	N/A	$0.20	0.21	0.21
Idaho	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	New	3,088	20	$11,804	75%	N/A	$0.39	1	1
Idaho	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,671	15	$8,946	80%	98%	$0.61	0.96	0.96
Idaho	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	1,337	7	$2,661	10%	94%	$0.37	0.09	0.09
Idaho	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	668	13	$1,926	75%	65%	$0.36	0.22	0.22
Idaho	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,671	15	$5,322	75%	75%	$0.37	0.63	0.63
Idaho	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,671	40	$58,922	2.0%	**%	$13.51	0.00	0.00
Idaho	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	5	25	$6,475	75%	85%	$108.87	0.00	0.00
Idaho	Large Office	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,671	15	$30,412	10%	75%	$2.09	0.07	0.07
Idaho	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	2,572	25	$34	80%	90%	$0.00	0.99	0.99
Idaho	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	3,025	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	4,705	15	$8,598	100%	N/A	$0.21	0.00	0.00
Idaho	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	38,116	15	$-58180.191	35%	N/A	$-0.23	1	2
Idaho	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	2,062	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	3,207	15	$6,878	100%	N/A	$0.25	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	25,984	15	$-44342.126	35%	N/A	$-0.26	0.64	0.66
Idaho	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	5,415	15	$7,603	75%	94%	$0.16	8	8
Idaho	Large Office	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	16,247	15	$92,454	15%	68%	$0.65	3	3
Idaho	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	5,415	15	$8,946	35%	98%	$0.19	3	3
Idaho	Large Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	8,123	10	$17,244	10%	20%	$0.30	0.31	0.31
Idaho	Large Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	5,415	5	$4,866	95%	72%	$0.21	7	7
Idaho	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	13,539	15	$63,359	50%	94%	$0.54	11	11
Idaho	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	5,415	15	$5,322	75%	75%	$0.11	4	4
Idaho	Large Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,353	18	$7,299	45%	65%	$0.57	0.59	0.59
Idaho	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	5,415	40	$58,922	2.0%	**%	$4.17	0.16	0.16
Idaho	Large Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,707	12	$987	10%	39%	$0.05	0.15	0.15
Idaho	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	87	25	$13,461	45%	58%	$14.97	0.03	0.03
Idaho	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	18	25	$6,475	25%	85%	$33.61	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	1,624	20	$5,291	45%	59%	$0.33	0.64	0.64
Idaho	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	974	20	$928	45%	85%	$0.10	0.55	0.55
Idaho	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	70%	.	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	66%	.	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,769	7	$5,995	90%	85%	$0.16	7	7
Idaho	Large Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	3,550	10	$8,711	35%	68%	$0.35	1	1
Idaho	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	8,331	25	$34	15%	90%	$0.00	1	1
Idaho	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,087	25	$1,441	15%	71%	$0.02	0.96	0.96
Idaho	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	3,601	15	$4,055	75%	94%	$0.13	1	1
Idaho	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	3,601	15	$8,946	35%	98%	$0.29	0.76	0.76

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	9,004	15	$63,359	50%	94%	$0.81	2	2
Idaho	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,601	15	$5,322	75%	75%	$0.17	1	1
Idaho	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	3,601	40	$58,922	2.0%	**%	$6.27	0.02	0.02
Idaho	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	12	25	$6,475	75%	85%	$50.54	0.00	0.00
Idaho	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	648	20	$928	45%	85%	$0.14	0.09	0.09
Idaho	Large Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,601	15	$30,412	10%	75%	$0.97	0.13	0.13
Idaho	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	5,541	25	$34	80%	90%	$0.00	1	1
Idaho	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	174	6	$3	100%	N/A	$0.00	2	2
Idaho	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	174	6	$3	100%	N/A	$0.00	0.80	0.80
Idaho	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	838	4	$946	100%	N/A	$0.32	0.63	0.63
Idaho	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	838	4	$946	100%	N/A	$0.32	1	1
Idaho	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	18	20	$2	100%	N/A	$0.01	0.00	0.00
Idaho	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	49	20	$1	100%	N/A	$0.00	0.00	0.00
Idaho	Large Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	401	20	$48	8.8%	100%	$0.01	0.45	0.45
Idaho	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	18	20	$2	100%	N/A	$0.01	0.00	0.00
Idaho	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	49	20	$1	100%	N/A	$0.00	0.00	0.00
Idaho	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	13,355	15	$9,890	100%	N/A	$0.09	0.00	0.00
Idaho	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	7,149	15	$7,603	75%	94%	$0.12	6	6
Idaho	Large Office	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	60,549	15	$92,454	15%	68%	$0.18	7	7
Idaho	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	7,149	15	$8,946	35%	98%	$0.14	2	2
Idaho	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	20,183	15	$5,322	75%	75%	$0.03	13	13
Idaho	Large Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,045	18	$7,299	45%	65%	$0.15	1	1
Idaho	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	19,551	14	$27,584	5.0%	94%	$0.17	0.98	0.98
Idaho	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	7,149	40	$58,922	2.0%	**%	$3.16	0.15	0.15

Table C-2.2. Commercial Measure Details

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Idaho	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	50,703	30	$12,668	5.0%	N/A	$1.09	0.00	0.00
Idaho	Large Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	15,137	12	$987	10%	39%	$0.01	0.62	0.62
Idaho	Large Office	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	15,196	25	$13,461	45%	58%	$0.09	4	4
Idaho	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	3,254	25	$6,475	25%	85%	$0.19	0.72	0.72
Idaho	Large Office	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	6,054	20	$5,291	45%	59%	$0.09	1	1
Idaho	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	3,632	20	$928	45%	85%	$0.03	1	1
Idaho	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	35,295	25	$24,026	15%	70%	$0.07	3	3
Idaho	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	6,874	25	$7,412	15%	90%	$0.11	0.93	0.93
Idaho	Large Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Idaho	Large Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	66%	.	0.00	0.00
Idaho	Large Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	25,229	7	$5,995	90%	85%	$0.04	19	19
Idaho	Large Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	3,550	10	$8,711	35%	68%	$0.35	0.76	0.76
Idaho	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	31,051	25	$34	15%	90%	$0.00	3	3
Idaho	Large Office	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	26,414	25	$1,441	15%	71%	$0.01	2	2
Idaho	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	7,179	15	$7,912	100%	N/A	$0.13	0.00	0.00
Idaho	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	3,513	15	$4,055	75%	94%	$0.13	0.99	0.99
Idaho	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	3,513	15	$8,946	35%	98%	$0.29	0.45	0.45
Idaho	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	9,919	15	$5,322	75%	75%	$0.06	2	2
Idaho	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	9,608	14	$27,584	5.0%	94%	$0.34	0.16	0.16
Idaho	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	3,513	40	$58,922	2.0%	**%	$6.43	0.01	0.01
Idaho	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	28,062	30	$15,097	5.0%	N/A	$1.00	0.00	0.00
Idaho	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1,599	25	$6,475	75%	85%	$0.40	0.27	0.27
Idaho	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	1,785	20	$928	45%	85%	$0.05	0.18	0.18
Idaho	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	3,378	25	$7,412	35%	90%	$0.21	0.28	0.28
Idaho	Large Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	9,919	15	$30,412	10%	75%	$0.35	0.25	0.25
Idaho	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	15,260	25	$34	80%	90%	$0.00	3	3

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	2,848	8	$792	5.0%	95%	$0.05	2	2
Idaho	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,361	8	$1,087	75%	70%	$0.05	27	27
Idaho	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,791	15	$3,772	62%	90%	$0.16	24	24
Idaho	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,194	8	$5,563	90%	42%	$0.78	5	5
Idaho	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	61	13	$92	75%	95%	$0.19	0.68	0.68
Idaho	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	27,705	17	$18,825	5.0%	95%	$0.07	20	20
Idaho	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	2,848	8	$792	5.0%	95%	$0.05	0.70	0.70
Idaho	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,361	8	$1,087	75%	70%	$0.05	9	9
Idaho	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,791	15	$3,772	62%	90%	$0.16	7	7
Idaho	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,194	8	$5,563	90%	42%	$0.78	1	1
Idaho	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	61	13	$92	75%	95%	$0.19	0.21	0.21
Idaho	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	27,705	17	$18,825	5.0%	95%	$0.07	5	5
Idaho	Large Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	2,041	10	$2,531	75%	95%	$0.18	18	18
Idaho	Large Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	5,794	8	$12,789	30%	78%	$0.37	17	17
Idaho	Large Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,345	8	$9,592	30%	78%	$0.37	0.00	0.00
Idaho	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,922	13	$1,874	100%	N/A	$0.06	0.00	0.00
Idaho	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	5,371	13	$9,091	100%	N/A	$0.21	43	45
Idaho	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	11,913	13	$74,720	25%	N/A	$0.78	32	33
Idaho	Large Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	7,858	8	$5,563	75%	42%	$0.12	30	30
Idaho	Large Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	718	15	$435	100%	N/A	$0.11	0.00	0.00
Idaho	Large Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	884	15	$1,813	95%	N/A	$0.18	4	4
Idaho	Large Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	788	25	$13,150	50%	N/A	$1.48	0.13	0.13

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	501	17	$8	25%	N/A	$-0.08	0.00	0.00
Idaho	Large Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	249	15	$8,334	100%	N/A	$3.37	0.00	0.00
Idaho	Large Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	287	8	$5,563	75%	42%	$3.23	1	1
Idaho	Large Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	712	11	$277	95%	50%	$0.05	5	5
Idaho	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	142	13	$122	95%	98%	$0.11	2	2
Idaho	Large Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,833	10	$2,531	75%	95%	$0.20	6	6
Idaho	Large Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,555	8	$12,789	30%	78%	$0.47	5	5
Idaho	Large Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,416	8	$9,592	30%	78%	$0.47	0.00	0.00
Idaho	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	142	13	$122	95%	98%	$0.11	0.60	0.60
Idaho	Large Office	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	7,335	13	$6,426	100%	N/A	$0.11	34	34
Idaho	Large Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	7,060	8	$5,563	75%	42%	$0.13	10	10
Idaho	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	23,882	4	$355	85%	N/A	$0.00	0.00	14
Idaho	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	20,892	1	$235	100%	N/A	$0.00	0.00	0.00
Idaho	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,558	1	$183	100%	N/A	$-0.00	0.00	0.00
Idaho	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	24,080	12	$4,415	15%	N/A	$0.02	2	20
Idaho	Large Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,161	8	$5,563	75%	42%	$0.80	2	2
Idaho	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	12	7	$3	10%	90%	$0.05	0.01	0.01
Idaho	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	269	4	$0.00	75%	45%	$0.00	1	1
Idaho	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	158	10	$0.77	95%	75%	$0.00	1	1
Idaho	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	43	4	$4	5.0%	86%	$0.03	0.02	0.02
Idaho	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	6,082	4	$1,216	60%	90%	$0.06	51	51

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	12	7	$3	10%	90%	$0.05	0.00	0.00
Idaho	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	269	4	$0.00	75%	45%	$0.00	0.48	0.48
Idaho	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	158	10	$0.77	95%	75%	$0.00	0.56	0.56
Idaho	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	43	4	$4	5.0%	86%	$0.03	0.00	0.00
Idaho	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	6,082	4	$1,216	60%	90%	$0.06	17	17
Idaho	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	545	6	$594	100%	N/A	$0.22	0.24	0.24
Idaho	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	545	6	$594	100%	N/A	$0.22	0.12	0.12
Idaho	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	1,556	6	$181	100%	N/A	$0.02	2	2
Idaho	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	1,556	6	$181	100%	N/A	$0.02	0.00	0.00
Idaho	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	608	20	$1,656	100%	N/A	$0.27	0.00	0.00
Idaho	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	682	20	$2,220	100%	N/A	$0.33	2	2
Idaho	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	535	20	$129	100%	N/A	$0.02	0.00	0.00
Idaho	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	170	20	$59	100%	N/A	$0.03	0.00	0.00
Idaho	Large Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	4,174	20	$441	8.8%	100%	$0.01	4	4
Idaho	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	608	20	$1,656	100%	N/A	$0.27	0.00	0.00
Idaho	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	682	20	$2,220	100%	N/A	$0.33	2	2
Idaho	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	535	20	$129	100%	N/A	$0.02	0.00	0.00
Idaho	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	170	20	$59	100%	N/A	$0.03	0.00	0.00
Idaho	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	547	9	$72	100%	N/A	$0.02	6	6
Idaho	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	1,882	4	$7,056	10%	50%	$1.05	1	1
Idaho	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	547	9	$72	100%	N/A	$0.02	2	2
Idaho	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	1,875	4	$7,056	10%	50%	$1.05	0.39	0.39
Idaho	Large Office	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	69,066	15	$92,454	15%	68%	$0.15	18	18
Idaho	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	23,022	15	$5,322	75%	75%	$0.03	33	33
Idaho	Large Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,755	18	$7,299	45%	65%	$0.13	4	4
Idaho	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	34,533	14	$27,584	5.0%	94%	$0.10	3	3
Idaho	Large Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	23,022	12	$987	10%	39%	$0.01	2	2
Idaho	Large Office	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	26,796	25	$13,461	45%	58%	$0.05	16	16
Idaho	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	5,738	25	$6,475	25%	85%	$0.11	2	2
Idaho	Large Office	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	6,906	20	$5,291	45%	59%	$0.08	4	4

Table C-2.2. Commercial Measure Details

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Idaho	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	4,144	20	$928	45%	85%	$0.02	3	3
Idaho	Large Office	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	55,360	25	$24,026	15%	70%	$0.04	13	13
Idaho	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	10,304	25	$7,412	15%	90%	$0.07	3	3
Idaho	Large Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Idaho	Large Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	66%	.	0.00	0.00
Idaho	Large Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	28,777	7	$5,995	90%	85%	$0.04	48	48
Idaho	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	35,418	25	$34	15%	90%	$0.00	9	9
Idaho	Large Office	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	30,129	25	$1,441	15%	71%	$0.00	6	6
Idaho	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	10,461	15	$5,322	75%	75%	$0.06	4	4
Idaho	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	15,692	14	$27,584	5.0%	94%	$0.21	0.56	0.56
Idaho	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	2,607	25	$6,475	75%	85%	$0.24	0.95	0.95
Idaho	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	1,883	20	$928	45%	85%	$0.05	0.40	0.40
Idaho	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	4,682	25	$7,412	35%	90%	$0.15	0.82	0.82
Idaho	Large Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	10,461	15	$30,412	10%	75%	$0.33	0.56	0.56
Idaho	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	16,095	25	$34	80%	90%	$0.00	7	7
Idaho	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,043	10	$143	100%	N/A	$0.02	7	7
Idaho	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,043	10	$143	100%	N/A	$0.02	2	2
Idaho	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,707	10	$3,728	5.0%	90%	$0.03	13	13
Idaho	Large Office	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	29,560	15	$92,454	15%	68%	$0.36	46	46
Idaho	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,005	15	$201	95%	76%	$0.02	10	10
Idaho	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	25,126	20	$3,386	55%	45%	$0.01	92	92
Idaho	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,173	15	$11,105	11%	77%	$0.25	6	6
Idaho	Large Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	537	7	$152	65%	25%	$0.05	0.00	0.00
Idaho	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	17,004	10	$3,728	5.0%	90%	$0.03	3	3
Idaho	Large Office	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	27,371	50	$76,031	17%	98%	$0.24	16	16

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Idaho	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	867	15	$201	95%	76%	$0.03	2	2
Idaho	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	21,680	20	$3,386	55%	45%	$0.02	18	18
Idaho	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,463	15	$11,105	11%	77%	$0.29	1	1
Idaho	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,704	15	$1,531	75%	N/A	$0.03	0.00	0.23
Idaho	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,609	15	$915	75%	N/A	$0.02	0.00	0.00
Idaho	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	9,248	15	$1,531	75%	N/A	$0.03	0.00	0.06
Idaho	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	9,147	15	$915	75%	N/A	$0.02	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	730	10	$8,448	55%	80%	$1.66	0.06	0.06
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	95%	35%	$0.36	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	95%	35%	$0.08	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	95%	55%	$0.40	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	95%	55%	$0.37	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,920	25	$3,800	2.5%	100%	$0.13	0.01	0.01
Idaho	Large Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	146	12	$120	80%	30%	$0.11	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	232	9	$28	95%	25%	$-0.01	0.01	0.01
Idaho	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.02	0.02	0.02
Idaho	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$-0.00	0.01	0.01
Idaho	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	365	10	$392	75%	85%	$0.13	0.04	0.04
Idaho	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	768	10	$8,448	55%	80%	$1.57	0.01	0.01
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	95%	35%	$0.36	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	95%	35%	$0.08	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	95%	55%	$0.40	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	95%	55%	$0.37	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	3,075	25	$3,040	2.5%	100%	$0.10	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	244	9	$0.20	95%	25%	$-0.02	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.02	0.00	0.00
Idaho	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	384	10	$392	75%	85%	$0.12	0.01	0.01
Idaho	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,927	15	$7,864	75%	N/A	$0.13	12	12
Idaho	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	475	15	$343	100%	N/A	$0.08	0.00	0.00
Idaho	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	8,422	15	$7,864	75%	N/A	$0.12	5	6
Idaho	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	505	15	$343	100%	N/A	$0.08	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	746	10	$8,448	75%	94%	$1.62	1	1
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	75%	35%	$0.36	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	75%	35%	$0.08	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	75%	55%	$0.40	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	75%	55%	$0.37	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,986	25	$3,800	2.5%	100%	$0.12	0.17	0.17
Idaho	Large Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	149	12	$120	80%	30%	$0.11	0.08	0.08
Idaho	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	237	9	$28	95%	25%	$-0.01	0.13	0.13
Idaho	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.02	0.38	0.38

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$-0.00	0.25	0.25
Idaho	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	373	10	$392	75%	85%	$0.13	0.58	0.58
Idaho	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	771	10	$8,448	75%	94%	$1.57	0.36	0.36
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	75%	35%	$0.36	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	75%	35%	$0.08	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	75%	55%	$0.40	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	75%	55%	$0.37	0.00	0.00
Idaho	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	3,084	25	$3,040	2.5%	100%	$0.10	0.02	0.02
Idaho	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	245	9	$0.20	95%	25%	$-0.02	0.04	0.04
Idaho	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.02	0.10	0.10
Idaho	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	385	10	$392	75%	85%	$0.12	0.16	0.16
Idaho	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	1,287	4	$147	100%	N/A	$0.03	10	10
Idaho	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	1,287	4	$147	100%	N/A	$0.03	1	1
Idaho	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	4,031	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	6,270	15	$14,842	100%	N/A	$0.27	0.00	0.00
Idaho	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	50,794	15	$-100434.36	35%	N/A	$-0.30	17	24
Idaho	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	2,970	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	4,620	15	$11,874	100%	N/A	$0.30	0.00	0.00
Idaho	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	37,428	15	$-76546.21	35%	N/A	$-0.31	6	6

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	7,216	15	$8,750	25%	94%	$0.14	26	26
Idaho	Large Retail	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	21,650	15	$6,400	15%	68%	$0.56	32	32
Idaho	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	7,216	15	$8,902	80%	98%	$0.14	82	82
Idaho	Large Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	10,825	10	$29,768	10%	80%	$0.39	11	11
Idaho	Large Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	7,216	5	$8,400	95%	72%	$0.27	65	65
Idaho	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	18,042	15	$72,916	50%	94%	$0.46	104	104
Idaho	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	7,216	15	$6,125	75%	75%	$0.10	44	44
Idaho	Large Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,804	18	$8,400	45%	65%	$0.49	5	5
Idaho	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	7,216	40	$57,651	2.0%	**%	$3.11	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,608	12	$979	10%	39%	$0.04	1	1
Idaho	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	278	25	$13,395	45%	67%	$4.69	0.85	0.85
Idaho	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	25	25	$6,443	25%	85%	$25.10	0.05	0.05
Idaho	Large Retail	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	2,165	20	$6,089	45%	59%	$0.28	5	5
Idaho	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	1,299	20	$1,068	45%	85%	$0.08	5	5
Idaho	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$23,908	15%	84%	.	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$7,376	15%	90%	.	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	66%	.	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	9,021	7	$6,900	90%	85%	$0.14	69	69
Idaho	Large Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	4,799	10	$8,641	35%	68%	$0.26	10	10
Idaho	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	11,103	25	$34	15%	90%	$0.00	13	13
Idaho	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	9,445	25	$1,429	15%	71%	$0.01	8	8
Idaho	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	5,188	15	$4,666	25%	94%	$0.10	5	5
Idaho	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	5,188	15	$8,902	80%	98%	$0.20	18	18
Idaho	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	12,970	15	$72,916	50%	94%	$0.65	25	25
Idaho	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	5,188	15	$6,125	75%	75%	$0.14	10	10

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Idaho	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	5,188	40	$57,651	2.0%	**%	$4.33	0.00	0.00
Idaho	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	18	25	$6,443	75%	85%	$34.91	0.03	0.03
Idaho	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	933	20	$1,068	45%	85%	$0.11	0.94	0.94
Idaho	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	7,981	25	$34	80%	90%	$0.00	16	16
Idaho	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	248	6	$5	100%	N/A	$0.00	11	11
Idaho	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	248	6	$5	100%	N/A	$0.00	3	3
Idaho	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	173	4	$196	100%	N/A	$0.32	0.43	0.43
Idaho	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	173	4	$196	100%	N/A	$0.32	1	1
Idaho	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	16	20	$2	100%	N/A	$0.01	0.00	0.00
Idaho	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	44	20	$1	100%	N/A	$0.00	0.00	0.02
Idaho	Large Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	364	20	$44	8.8%	100%	$0.01	1	1
Idaho	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	16	20	$2	100%	N/A	$0.01	0.00	0.00
Idaho	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	44	20	$1	100%	N/A	$0.00	0.00	0.01
Idaho	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	13,687	15	$17,074	100%	N/A	$0.14	19	24
Idaho	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	9,713	15	$8,750	25%	94%	$0.10	7	7
Idaho	Large Retail	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	64,759	15	$6,400	15%	68%	$0.19	20	20
Idaho	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	9,713	15	$8,902	80%	98%	$0.11	22	22
Idaho	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	21,586	15	$6,125	75%	75%	$0.03	35	35
Idaho	Large Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,396	18	$8,400	45%	65%	$0.16	4	4
Idaho	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	17,808	14	$31,745	5.0%	94%	$0.21	2	2
Idaho	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	9,713	40	$57,651	2.0%	**%	$2.31	0.00	0.00
Idaho	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	53,649	30	$57,626	5.0%	N/A	$1.79	1	2
Idaho	Large Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	16,189	12	$979	10%	39%	$0.01	1	1
Idaho	Large Retail	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	23,454	25	$13,395	45%	67%	$0.06	18	18
Idaho	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2,975	25	$6,443	25%	85%	$0.21	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Retail	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	6,475	20	$6,089	45%	59%	$0.09	4	4
Idaho	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	3,885	20	$1,068	45%	85%	$0.03	3	3
Idaho	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	30,847	25	$23,908	15%	84%	$0.08	9	9
Idaho	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	6,018	25	$7,376	15%	90%	$0.12	2	2
Idaho	Large Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Idaho	Large Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	66%	.	0.00	0.00
Idaho	Large Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	26,983	7	$6,900	90%	85%	$0.05	51	51
Idaho	Large Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	4,799	10	$8,641	35%	68%	$0.26	2	2
Idaho	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	33,209	25	$34	15%	90%	$0.00	10	10
Idaho	Large Retail	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	28,250	25	$1,429	15%	71%	$0.00	6	6
Idaho	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	8,640	15	$13,659	100%	N/A	$0.18	5	5
Idaho	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	5,589	15	$4,666	25%	94%	$0.10	1	1
Idaho	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	5,589	15	$8,902	80%	98%	$0.18	4	4
Idaho	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	12,421	15	$6,125	75%	75%	$0.06	6	6
Idaho	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	10,248	14	$31,745	5.0%	94%	$0.37	0.43	0.43
Idaho	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	5,589	40	$57,651	2.0%	**%	$4.02	0.00	0.00
Idaho	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	34,648	30	$43,941	5.0%	N/A	$1.40	1	1
Idaho	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1,712	25	$6,443	75%	85%	$0.37	0.73	0.73
Idaho	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	2,235	20	$1,068	45%	85%	$0.05	0.56	0.56
Idaho	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	3,463	25	$7,376	35%	90%	$0.21	0.71	0.72
Idaho	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	19,110	25	$34	80%	90%	$0.00	10	10
Idaho	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	3,278	8	$912	5.0%	95%	$0.05	8	8
Idaho	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	8,419	8	$1,084	75%	70%	$0.02	229	229
Idaho	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	6,993	15	$9,449	62%	90%	$0.16	203	203
Idaho	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,535	8	$6,402	45%	56%	$0.30	36	36
Idaho	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	118	13	$176	75%	95%	$0.19	4	4
Idaho	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	31,885	17	$21,665	5.0%	95%	$0.07	78	78

Table C-2.2. Commercial Measure Details

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Idaho	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	3,278	8	$912	5.0%	95%	$0.05	2	2
Idaho	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	8,419	8	$1,084	75%	70%	$0.02	76	76
Idaho	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	6,993	15	$9,449	62%	90%	$0.16	62	62
Idaho	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,535	8	$6,402	45%	56%	$0.30	11	11
Idaho	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	118	13	$176	75%	95%	$0.19	1	1
Idaho	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	31,885	17	$21,665	5.0%	95%	$0.07	21	21
Idaho	Large Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	4,076	10	$2,913	5.0%	95%	$0.10	8	8
Idaho	Large Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	10,774	8	$12,758	5.0%	84%	$0.20	19	19
Idaho	Large Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	8,080	8	$9,568	5.0%	84%	$0.20	14	14
Idaho	Large Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	846	6	$314	10%	80%	$0.05	2	2
Idaho	Large Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	634	6	$322	5.0%	80%	$0.09	1	1
Idaho	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	15,487	13	$14,850	100%	N/A	$0.12	429	431
Idaho	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	10,855	13	$5,283	100%	N/A	$0.06	0.00	0.00
Idaho	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	25,838	13	$31,908	25%	N/A	$0.64	228	229
Idaho	Large Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	18,549	8	$6,402	5.0%	56%	$0.06	21	21
Idaho	Large Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,284	15	$2,425	100%	N/A	$0.05	0.00	0.00
Idaho	Large Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	7,718	15	$10,198	95%	N/A	$0.14	128	128
Idaho	Large Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,895	16	$74,079	50%	N/A	$1.17	5	5
Idaho	Large Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	4,390	11	$18	25%	N/A	$-0.01	0.00	0.00
Idaho	Large Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,183	15	$46,943	100%	N/A	$2.39	0.00	0.00
Idaho	Large Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,922	8	$6,402	5.0%	56%	$0.36	3	3

Table C-2.2. Commercial Measure Details

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Idaho	Large Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	3,078	11	$1,198	95%	50%	$0.05	76	76
Idaho	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	615	13	$527	95%	98%	$0.11	29	29
Idaho	Large Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	4,906	10	$2,913	5.0%	95%	$0.08	3	3
Idaho	Large Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	9,034	8	$12,758	5.0%	84%	$0.24	5	5
Idaho	Large Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	6,775	8	$9,568	5.0%	84%	$0.24	4	4
Idaho	Large Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	654	6	$160	10%	80%	$0.01	0.80	0.80
Idaho	Large Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	361	6	$140	10%	80%	$0.06	0.44	0.44
Idaho	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	615	13	$527	95%	98%	$0.11	8	8
Idaho	Large Retail	Lighting Interior Other	Lighting Package, High Efficiency	13% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	31,893	13	$74,347	100%	N/A	$0.29	520	520
Idaho	Large Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	22,325	8	$6,402	5.0%	56%	$0.05	9	9
Idaho	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	73,745	4	$701	85%	N/A	$0.00	0.00	560
Idaho	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	64,549	1	$464	100%	N/A	$0.00	0.00	0.00
Idaho	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,218	1	$353	100%	N/A	$-0.00	0.00	0.00
Idaho	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	74,349	12	$8,740	15%	N/A	$0.01	27	309
Idaho	Large Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	5,667	8	$6,402	5.0%	56%	$0.19	2	2
Idaho	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	15	7	$4	10%	90%	$0.05	0.07	0.07
Idaho	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	382	4	$0.00	10%	45%	$0.00	0.89	0.89
Idaho	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	42	10	$0.20	95%	75%	$0.00	1	1
Idaho	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	54	4	$5	5.0%	86%	$0.03	0.12	0.12
Idaho	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	700	4	$140	60%	90%	$0.06	19	19
Idaho	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	15	7	$4	10%	90%	$0.05	0.02	0.02

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Idaho	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	382	4	$0.00	10%	45%	$0.00	0.30	0.30
Idaho	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	42	10	$0.20	95%	75%	$0.00	0.49	0.49
Idaho	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	54	4	$5	5.0%	86%	$0.03	0.04	0.04
Idaho	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	700	4	$140	60%	90%	$0.06	6	6
Idaho	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	775	6	$844	100%	N/A	$0.22	1	1
Idaho	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	775	6	$844	100%	N/A	$0.22	0.60	0.60
Idaho	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	495	6	$57	100%	N/A	$0.02	2	2
Idaho	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	495	6	$57	100%	N/A	$0.02	0.00	0.00
Idaho	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	552	20	$1,502	100%	N/A	$0.27	0.00	0.00
Idaho	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	619	20	$2,014	100%	N/A	$0.33	6	8
Idaho	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	485	20	$117	100%	N/A	$0.02	0.00	0.00
Idaho	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	154	20	$53	100%	N/A	$0.03	0.00	0.00
Idaho	Large Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	3,785	20	$400	8.8%	100%	$0.01	12	12
Idaho	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	552	20	$1,502	100%	N/A	$0.27	0.00	0.00
Idaho	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	619	20	$2,014	100%	N/A	$0.33	6	6
Idaho	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	485	20	$117	100%	N/A	$0.02	0.00	0.00
Idaho	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	154	20	$53	100%	N/A	$0.03	0.00	0.00
Idaho	Large Retail	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	58,065	15	$6,400	15%	68%	$0.21	23	23
Idaho	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	19,355	15	$6,125	75%	75%	$0.04	42	42
Idaho	Large Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	4,838	18	$8,400	45%	65%	$0.18	5	5
Idaho	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	29,032	14	$31,745	5.0%	94%	$0.13	5	5
Idaho	Large Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	19,355	12	$979	10%	39%	$0.01	2	2
Idaho	Large Retail	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	38,079	25	$13,395	45%	67%	$0.03	41	41
Idaho	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	4,824	25	$6,443	25%	85%	$0.13	3	3
Idaho	Large Retail	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	5,806	20	$6,089	45%	59%	$0.11	5	5
Idaho	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	3,483	20	$1,068	45%	85%	$0.03	4	4
Idaho	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	46,541	25	$23,908	15%	84%	$0.05	19	19
Idaho	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	8,663	25	$7,376	15%	90%	$0.08	3	3
Idaho	Large Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Idaho	Large Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	66%	.	0.00	0.00

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Idaho	Large Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	24,193	7	$6,900	90%	85%	$0.05	60	60
Idaho	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	29,776	25	$34	15%	90%	$0.00	11	11
Idaho	Large Retail	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	25,330	25	$1,429	15%	71%	$0.01	7	7
Idaho	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	9,870	15	$6,125	75%	75%	$0.07	6	6
Idaho	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	14,805	14	$31,745	5.0%	94%	$0.26	0.82	0.82
Idaho	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	2,460	25	$6,443	75%	85%	$0.26	1	1
Idaho	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	1,776	20	$1,068	45%	85%	$0.06	0.59	0.59
Idaho	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	4,417	25	$7,376	35%	90%	$0.16	1	1
Idaho	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	15,184	25	$34	80%	90%	$0.00	10	10
Idaho	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	2,618	10	$359	100%	N/A	$0.02	59	59
Idaho	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	2,618	10	$359	100%	N/A	$0.02	22	22
Idaho	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,250	10	$4,291	5.0%	90%	$0.03	45	45
Idaho	Large Retail	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	28,875	15	$6,400	15%	68%	$0.42	150	150
Idaho	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	466	18	$1,125	95%	65%	$0.25	14	14
Idaho	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	981	15	$231	95%	76%	$0.03	35	35
Idaho	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	24,543	20	$3,897	55%	45%	$0.02	300	300
Idaho	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,053	15	$12,780	5.0%	77%	$0.29	8	8
Idaho	Large Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	618	7	$175	65%	25%	$0.05	0.00	0.00
Idaho	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	15,680	10	$4,291	5.0%	90%	$0.04	11	11
Idaho	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	466	18	$1,125	95%	65%	$0.25	4	4
Idaho	Large Retail	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	26,250	50	$87,500	8.0%	98%	$0.28	24	24
Idaho	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	799	15	$231	95%	76%	$0.03	8	8
Idaho	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	19,992	20	$3,897	55%	45%	$0.02	57	57

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,116	15	$12,780	5.0%	77%	$0.36	2	2
Idaho	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,052	15	$1,450	75%	N/A	$0.04	0.02	0.76
Idaho	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,986	15	$867	75%	N/A	$0.03	0.00	0.00
Idaho	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,843	15	$1,450	75%	N/A	$0.04	0.01	0.20
Idaho	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,779	15	$867	75%	N/A	$0.03	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	507	10	$9,723	75%	94%	$2.74	0.32	0.32
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.36	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.40	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.37	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	24	12	$13	20%	95%	$0.07	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$13	20%	94%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,030	25	$3,600	2.5%	100%	$0.17	0.04	0.04
Idaho	Large Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	101	12	$114	80%	90%	$0.15	0.06	0.06
Idaho	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	161	9	$28	95%	25%	$0.01	0.03	0.03
Idaho	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.08	0.01	0.01
Idaho	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	253	10	$392	75%	95%	$0.19	0.16	0.16
Idaho	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	485	10	$9,723	75%	94%	$2.86	0.07	0.07
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.36	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.40	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.37	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	23	12	$13	20%	95%	$0.07	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	21	12	$13	20%	94%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,942	25	$2,880	2.5%	100%	$0.14	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	154	9	$0.20	95%	25%	$-0.02	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	242	10	$392	75%	95%	$0.20	0.03	0.03
Idaho	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	5,511	15	$7,450	75%	N/A	$0.18	42	43
Idaho	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	330	15	$325	100%	N/A	$0.11	0.00	0.00
Idaho	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	5,321	15	$7,450	75%	N/A	$0.18	18	18
Idaho	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	319	15	$325	100%	N/A	$0.12	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	519	10	$9,723	25%	94%	$2.68	1	1
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.36	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.08	0.01	0.01
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.40	0.00	0.01
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.37	0.07	0.08
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	24	12	$13	0.0%	95%	$0.07	0.00	0.00

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Idaho	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$13	0.0%	95%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,076	25	$3,600	2.5%	100%	$0.17	0.60	0.60
Idaho	Large Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	103	12	$114	80%	90%	$0.14	0.86	0.86
Idaho	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	165	9	$28	95%	25%	$0.01	0.46	0.46
Idaho	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.08	0.16	0.16
Idaho	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	259	10	$392	75%	95%	$0.19	2	2
Idaho	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	487	10	$9,723	25%	94%	$2.85	0.37	0.37
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.36	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.40	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.37	0.02	0.02
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	23	12	$13	0.0%	95%	$0.07	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	21	12	$13	0.0%	95%	$0.08	0.00	0.00
Idaho	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,948	25	$2,880	2.5%	100%	$0.14	0.06	0.06
Idaho	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	155	9	$0.20	95%	25%	$-0.02	0.12	0.12
Idaho	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.08	0.04	0.04
Idaho	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	243	10	$392	75%	95%	$0.20	0.56	0.56
Idaho	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	647	4	$73	100%	N/A	$0.03	4	4
Idaho	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	647	4	$73	100%	N/A	$0.03	0.71	0.71
Idaho	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	151	12	$25	90%	90%	$0.02	0.03	0.03

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Idaho	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	13	12	$35	55%	90%	$0.34	0.00	0.00
Idaho	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	65	12	$15	95%	85%	$0.03	0.01	0.01
Idaho	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	113	12	$64	19%	55%	$0.07	0.00	0.00
Idaho	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	184	12	$118	55%	21%	$0.08	0.00	0.00
Idaho	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	319	12	$179	11%	75%	$0.07	0.00	0.00
Idaho	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	151	12	$25	90%	90%	$0.02	0.01	0.01
Idaho	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	13	12	$35	55%	90%	$0.34	0.00	0.00
Idaho	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	65	12	$15	95%	85%	$0.03	0.00	0.00
Idaho	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	113	12	$64	19%	55%	$0.07	0.00	0.00
Idaho	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	184	12	$118	55%	21%	$0.08	0.00	0.00
Idaho	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	319	12	$179	11%	75%	$0.07	0.00	0.00
Idaho	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	298	15	$2,000	50%	94%	$0.77	0.61	0.61
Idaho	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	186	5	$1,362	95%	81%	$1.70	0.62	0.62
Idaho	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,129	10	$6,291	25%	70%	$0.80	0.84	0.84
Idaho	Lodging	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	747	15	$14,607	45%	30%	$2.25	0.42	0.42
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	3,135	20	$4,685	100%	N/A	$0.15	5	6
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,045	20	$1,561	100%	N/A	$0.15	0.00	0.00
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,331	20	$3,484	100%	N/A	$0.15	0.00	0.00
Idaho	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,494	15	$2,800	45%	98%	$0.22	2	2
Idaho	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,195	7	$777	10%	94%	$0.12	0.45	0.45
Idaho	Lodging	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	2,092	15	$69	65%	35%	$0.00	1	1
Idaho	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	597	13	$562	75%	65%	$0.12	1	1
Idaho	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,494	15	$1,400	75%	75%	$0.02	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	672	12	$5,450	10%	75%	$0.21	0.18	0.18
Idaho	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,494	40	$81,040	2.0%	**%	$4.73	0.00	0.00
Idaho	Lodging	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	747	12	$426	10%	39%	$0.01	0.10	0.10
Idaho	Lodging	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	24	25	$4,213	45%	67%	$0.06	0.02	0.02
Idaho	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	5	25	$2,026	25%	85%	$0.13	0.00	0.00
Idaho	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	79%	.	0.00	0.00
Idaho	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Idaho	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Idaho	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	68%	.	0.00	0.00
Idaho	Lodging	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (ID State Code)	No Insulation	Per Building	Existing	224	15	$164	65%	45%	$0.08	0.23	0.23
Idaho	Lodging	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,868	7	$1,577	90%	85%	$0.03	5	5
Idaho	Lodging	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	3,097	10	$3,764	35%	68%	$0.17	2	2
Idaho	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,299	25	$14	15%	90%	$0.00	0.94	0.94
Idaho	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,956	25	$622	15%	68%	$0.01	0.59	0.59
Idaho	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	156	15	$1,066	50%	94%	$0.78	0.09	0.09
Idaho	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	97	5	$1,362	95%	81%	$3.25	0.11	0.11
Idaho	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	592	10	$5,662	25%	70%	$1.37	0.14	0.14
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,984	20	$4,217	100%	N/A	$0.21	2	2
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	661	20	$1,405	100%	N/A	$0.21	0.00	0.00
Idaho	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,475	20	$3,135	100%	N/A	$0.21	0.00	0.00
Idaho	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	783	15	$2,800	45%	98%	$0.41	0.43	0.43
Idaho	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	626	7	$700	10%	94%	$0.21	0.07	0.07
Idaho	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	313	13	$506	75%	65%	$0.20	0.19	0.19
Idaho	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	783	15	$1,400	75%	75%	$0.03	0.53	0.53

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	352	12	$5,450	10%	75%	$0.32	0.03	0.03
Idaho	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	783	40	$81,040	2.0%	**%	$9.02	0.00	0.00
Idaho	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	2	25	$2,026	75%	85%	$0.19	0.00	0.00
Idaho	Lodging	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	783	15	$8,000	10%	75%	$0.19	0.06	0.06
Idaho	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,205	25	$14	80%	90%	$0.00	0.82	0.82
Idaho	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	501	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,282	15	$726	100%	N/A	$0.07	0.00	0.00
Idaho	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	10,621	15	$-15204.351	35%	N/A	$-0.22	2	3
Idaho	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	315	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	807	15	$580	100%	N/A	$0.08	0.00	0.00
Idaho	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	6,684	15	$-11084.641	35%	N/A	$-0.26	0.69	0.71
Idaho	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	351	15	$2,000	50%	94%	$0.65	1	1
Idaho	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,757	15	$2,800	45%	98%	$0.18	7	7
Idaho	Lodging	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,635	10	$4,536	10%	30%	$0.25	0.74	0.74
Idaho	Lodging	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,757	5	$1,280	95%	72%	$0.17	11	11
Idaho	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	4,393	15	$16,666	50%	94%	$0.44	17	17
Idaho	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,757	15	$1,400	75%	75%	$0.02	7	7
Idaho	Lodging	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	439	18	$1,920	45%	65%	$0.10	0.93	0.93
Idaho	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	790	12	$5,450	10%	75%	$0.20	0.42	0.42
Idaho	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,757	40	$81,040	2.0%	**%	$4.02	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	3,951	15	$3,101	60%	97%	$0.09	16	16

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	878	12	$426	10%	39%	$0.01	0.21	0.21
Idaho	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	28	25	$4,213	45%	67%	$0.06	0.05	0.05
Idaho	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	6	25	$2,026	25%	85%	$0.13	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	527	20	$1,391	45%	59%	$0.06	0.86	0.86
Idaho	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	316	20	$244	45%	85%	$0.02	0.74	0.74
Idaho	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	79%	.	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	68%	.	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,196	7	$1,577	90%	85%	$0.03	10	10
Idaho	Lodging	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	3,097	10	$3,764	35%	68%	$0.17	4	4
Idaho	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,703	25	$14	15%	90%	$0.00	1	1
Idaho	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,299	25	$622	15%	68%	$0.01	1	1
Idaho	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	204	15	$1,066	50%	94%	$0.60	0.30	0.30
Idaho	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,024	15	$2,800	45%	98%	$0.31	1	1
Idaho	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,560	15	$16,666	50%	94%	$0.75	3	3
Idaho	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,024	15	$1,400	75%	75%	$0.03	1	1
Idaho	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	460	12	$5,450	10%	75%	$0.31	0.08	0.08
Idaho	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,024	40	$81,040	2.0%	**%	$6.90	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,302	15	$3,101	60%	97%	$0.15	3	3
Idaho	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	3	25	$2,026	75%	85%	$0.19	0.00	0.00
Idaho	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	184	20	$244	45%	85%	$0.03	0.11	0.11
Idaho	Lodging	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,024	15	$8,000	10%	75%	$0.18	0.16	0.16
Idaho	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,575	25	$14	80%	90%	$0.00	2	2
Idaho	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,075	15	$2,800	45%	98%	$0.15	7	7
Idaho	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,075	15	$1,400	75%	75%	$0.02	9	9

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	934	12	$5,450	10%	75%	$0.19	0.51	0.51
Idaho	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,075	40	$81,040	2.0%	**%	$3.41	0.00	0.00
Idaho	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	4,667	15	$3,101	60%	97%	$0.08	19	19
Idaho	Lodging	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,037	12	$426	10%	39%	$0.01	0.25	0.25
Idaho	Lodging	Cooling Room	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	33	25	$4,213	45%	67%	$0.06	0.06	0.06
Idaho	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	7	25	$2,026	25%	85%	$0.13	0.00	0.00
Idaho	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	79%	.	0.00	0.00
Idaho	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Idaho	Lodging	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Idaho	Lodging	Cooling Room	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	68%	.	0.00	0.00
Idaho	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,825	9	$1,056	50%	N/A	$0.09	4	5
Idaho	Lodging	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	3,097	10	$3,764	35%	68%	$0.17	4	4
Idaho	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	3,193	25	$14	15%	90%	$0.00	2	2
Idaho	Lodging	Cooling Room	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,716	25	$622	15%	68%	$0.01	1	1
Idaho	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,252	15	$2,800	45%	98%	$0.26	1	1
Idaho	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,252	15	$1,400	75%	75%	$0.03	1	1
Idaho	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	563	12	$5,450	10%	75%	$0.29	0.09	0.09
Idaho	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,252	40	$81,040	2.0%	**%	$5.65	0.00	0.00
Idaho	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,815	15	$3,101	60%	97%	$0.13	3	3
Idaho	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	4	25	$2,026	75%	85%	$0.19	0.00	0.00
Idaho	Lodging	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,252	15	$8,000	10%	75%	$0.17	0.18	0.18
Idaho	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	1,104	9	$844	50%	N/A	$0.12	0.88	0.90
Idaho	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,926	25	$14	80%	90%	$0.00	2	2
Idaho	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	19	6	$0.42	100%	N/A	$0.00	0.64	0.64
Idaho	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	19	6	$0.42	100%	N/A	$0.00	0.22	0.22
Idaho	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	87	4	$98	100%	N/A	$0.32	0.16	0.16

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Idaho	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	87	4	$98	100%	N/A	$0.32	0.37	0.37
Idaho	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00
Idaho	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	23	20	$0.62	100%	N/A	$0.00	0.00	0.00
Idaho	Lodging	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	193	20	$23	8.8%	100%	$0.01	0.53	0.53
Idaho	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Idaho	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	23	20	$0.62	100%	N/A	$0.00	0.00	0.00
Idaho	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,257	15	$2,702	100%	N/A	$0.14	0.00	0.00
Idaho	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	7,906	15	$5,405	100%	N/A	$0.08	17	22
Idaho	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	412	15	$2,000	50%	94%	$0.56	0.96	0.96
Idaho	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,063	15	$2,800	45%	98%	$0.16	4	4
Idaho	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	7,265	15	$1,400	75%	75%	$0.02	19	19
Idaho	Lodging	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,816	18	$1,920	45%	65%	$0.11	2	2
Idaho	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	7,803	14	$13,760	5.0%	94%	$0.21	1	1
Idaho	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	3,269	12	$5,450	10%	75%	$0.22	1	1
Idaho	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,063	40	$81,040	2.0%	**%	$3.43	0.00	0.00
Idaho	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	14,656	30	$60,233	5.0%	N/A	$0.99	0.96	1
Idaho	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	16,335	15	$3,101	60%	97%	$0.02	42	42
Idaho	Lodging	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	5,448	12	$426	10%	39%	$0.01	0.83	0.83
Idaho	Lodging	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,052	25	$4,213	45%	67%	$0.07	7	7
Idaho	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1,296	25	$2,026	25%	85%	$0.15	1	1
Idaho	Lodging	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	2,179	20	$1,391	45%	59%	$0.06	2	2
Idaho	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	1,307	20	$244	45%	85%	$0.02	1	1
Idaho	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	20,046	25	$7,520	15%	79%	$0.04	8	8

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	2,803	25	$2,320	15%	90%	$0.08	1	1
Idaho	Lodging	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Idaho	Lodging	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	68%	.	0.00	0.00
Idaho	Lodging	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	9,081	7	$1,577	90%	85%	$0.03	25	25
Idaho	Lodging	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	3,097	10	$3,764	35%	68%	$0.17	2	2
Idaho	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	11,177	25	$14	15%	90%	$0.00	4	4
Idaho	Lodging	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	9,508	25	$622	15%	68%	$0.01	3	3
Idaho	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	1,486	15	$2,162	100%	N/A	$0.17	0.00	0.00
Idaho	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	5,281	15	$4,324	100%	N/A	$0.09	5	5
Idaho	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	251	15	$1,066	50%	94%	$0.49	0.18	0.18
Idaho	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,259	15	$2,800	45%	98%	$0.26	0.85	0.85
Idaho	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,435	15	$1,400	75%	75%	$0.04	3	3
Idaho	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,763	14	$13,760	5.0%	94%	$0.34	0.32	0.32
Idaho	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,995	12	$5,450	10%	75%	$0.36	0.22	0.22
Idaho	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,259	40	$81,040	2.0%	**%	$5.61	0.00	0.00
Idaho	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	9,611	30	$82,308	5.0%	N/A	$0.77	0.47	0.47
Idaho	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	9,972	15	$3,101	60%	97%	$0.04	8	8
Idaho	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	791	25	$2,026	75%	85%	$0.25	0.47	0.47
Idaho	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	798	20	$244	45%	85%	$0.03	0.28	0.28
Idaho	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	1,711	25	$2,320	35%	90%	$0.13	0.50	0.50
Idaho	Lodging	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	4,435	15	$8,000	10%	75%	$0.21	0.39	0.39
Idaho	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	6,823	25	$14	80%	90%	$0.00	5	5
Idaho	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	749	8	$208	5.0%	95%	$0.05	1	1
Idaho	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,144	8	$608	75%	70%	$0.09	23	23

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	950	15	$1,284	62%	90%	$0.16	20	20
Idaho	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	831	8	$1,463	90%	56%	$0.29	12	12
Idaho	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	70	13	$105	75%	95%	$0.19	1	1
Idaho	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	7,288	17	$4,952	5.0%	95%	$0.07	13	13
Idaho	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	749	8	$208	5.0%	95%	$0.05	0.45	0.45
Idaho	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,144	8	$608	75%	70%	$0.09	7	7
Idaho	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	950	15	$1,284	62%	90%	$0.16	6	6
Idaho	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	831	8	$1,463	90%	56%	$0.29	4	4
Idaho	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	70	13	$105	75%	95%	$0.19	0.59	0.59
Idaho	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	7,288	17	$4,952	5.0%	95%	$0.07	3	3
Idaho	Lodging	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	185	10	$666	25%	95%	$0.51	1	1
Idaho	Lodging	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,036	8	$7,155	5.0%	92%	$1.15	1	1
Idaho	Lodging	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	777	8	$5,366	5.0%	92%	$1.15	1	1
Idaho	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	428	13	$671	100%	N/A	$0.20	10	11
Idaho	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	356	13	$-68.769011	100%	N/A	$-0.05	0.00	0.00
Idaho	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	933	13	$7,870	0.0%	N/A	$1.07	0.00	0.00
Idaho	Lodging	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,460	8	$1,463	5.0%	56%	$0.17	1	1
Idaho	Lodging	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	58	15	$39	100%	N/A	$0.43	0.00	0.00
Idaho	Lodging	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	72	15	$171	95%	N/A	$-0.29	0.84	0.84
Idaho	Lodging	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	64	29	$1,259	50%	N/A	$0.39	0.02	0.02
Idaho	Lodging	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	41	20	$-1.7063436	25%	N/A	$-0.80	0.00	0.00

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Idaho	Lodging	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$797	100%	N/A	$-0.04	0.00	0.00
Idaho	Lodging	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	46	8	$1,463	5.0%	56%	$5.24	0.04	0.04
Idaho	Lodging	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	178	11	$69	95%	50%	$0.05	3	3
Idaho	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	35	13	$30	95%	98%	$0.11	1	1
Idaho	Lodging	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	408	10	$666	25%	95%	$0.23	0.89	0.89
Idaho	Lodging	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	777	8	$7,155	5.0%	92%	$1.53	0.33	0.33
Idaho	Lodging	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	582	8	$5,366	5.0%	92%	$1.53	0.25	0.25
Idaho	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	35	13	$30	95%	98%	$0.11	0.30	0.30
Idaho	Lodging	Lighting Interior Other	Lighting Package, High Efficiency	25% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	5,102	13	$5,628	100%	N/A	$0.14	61	61
Idaho	Lodging	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,214	8	$1,463	5.0%	56%	$0.08	0.85	0.85
Idaho	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	38,478	4	$674	85%	N/A	$0.00	0.00	117
Idaho	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	33,669	1	$446	100%	N/A	$0.00	0.00	0.00
Idaho	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	9,181	1	$345	100%	N/A	$-0.00	0.00	0.00
Idaho	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	38,796	12	$8,386	15%	N/A	$0.03	11	99
Idaho	Lodging	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	4,443	8	$1,463	5.0%	56%	$0.05	1	1
Idaho	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.97	10%	90%	$0.05	0.01	0.01
Idaho	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	30	4	$0.00	25%	45%	$0.00	0.13	0.13
Idaho	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	10	10	$0.05	95%	75%	$0.00	0.28	0.28
Idaho	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	23	23
Idaho	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	12	4	$1	5.0%	86%	$0.03	0.02	0.02
Idaho	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	200	4	$40	60%	90%	$0.06	4	4

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.97	10%	90%	$0.05	0.00	0.00
Idaho	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	30	4	$0.00	25%	45%	$0.00	0.04	0.04
Idaho	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	10	10	$0.05	95%	75%	$0.00	0.08	0.08
Idaho	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	7	7
Idaho	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	12	4	$1	5.0%	86%	$0.03	0.00	0.00
Idaho	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	200	4	$40	60%	90%	$0.06	1	1
Idaho	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	61	6	$67	100%	N/A	$0.22	0.06	0.06
Idaho	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	61	6	$67	100%	N/A	$0.22	0.03	0.03
Idaho	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	67	6	$7	100%	N/A	$0.02	0.23	0.23
Idaho	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	67	6	$7	100%	N/A	$0.02	0.00	0.00
Idaho	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	460	10	$382	5.0%	80%	$0.12	0.07	0.07
Idaho	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	625	10	$517	5.0%	80%	$0.12	0.10	0.10
Idaho	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	13	10	$2	1.0%	85%	$0.03	0.00	0.00
Idaho	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	20	15	$18	0.0%	95%	$0.10	0.00	0.00
Idaho	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	460	10	$382	5.0%	80%	$0.12	0.02	0.02
Idaho	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	625	10	$517	5.0%	80%	$0.12	0.03	0.03
Idaho	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	13	10	$2	1.0%	85%	$0.03	0.00	0.00
Idaho	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	20	15	$18	0.0%	95%	$0.10	0.00	0.00
Idaho	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	293	20	$797	100%	N/A	$0.27	0.00	0.00
Idaho	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	328	20	$1,068	100%	N/A	$0.33	2	3
Idaho	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	257	20	$62	100%	N/A	$0.02	0.00	0.00
Idaho	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	81	20	$28	100%	N/A	$0.03	0.00	0.00
Idaho	Lodging	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,008	20	$212	8.8%	100%	$0.01	5	5
Idaho	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	293	20	$797	100%	N/A	$0.27	0.00	0.00
Idaho	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	328	20	$1,068	100%	N/A	$0.33	2	2
Idaho	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	257	20	$62	100%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	81	20	$28	100%	N/A	$0.03	0.00	0.00
Idaho	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	6,024	15	$1,400	75%	75%	$0.02	43	43
Idaho	Lodging	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,506	18	$1,920	45%	65%	$0.12	5	5
Idaho	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	9,036	14	$13,760	5.0%	94%	$0.18	5	5
Idaho	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,710	12	$5,450	10%	75%	$0.23	2	2
Idaho	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	13,544	15	$3,101	60%	97%	$0.03	93	93
Idaho	Lodging	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	6,024	12	$426	10%	39%	$0.01	2	2
Idaho	Lodging	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,011	25	$4,213	45%	67%	$0.06	21	21
Idaho	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1,501	25	$2,026	25%	85%	$0.13	3	3
Idaho	Lodging	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	1,807	20	$1,391	45%	59%	$0.07	4	4
Idaho	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	1,084	20	$244	45%	85%	$0.02	4	4
Idaho	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	21,049	25	$7,520	15%	79%	$0.03	24	24
Idaho	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	2,696	25	$2,320	15%	90%	$0.08	3	3
Idaho	Lodging	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Idaho	Lodging	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	68%	.	0.00	0.00
Idaho	Lodging	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	7,530	7	$1,577	90%	85%	$0.03	53	53
Idaho	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	9,267	25	$14	15%	90%	$0.00	10	10
Idaho	Lodging	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,883	25	$622	15%	68%	$0.01	6	6
Idaho	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,128	15	$1,400	75%	75%	$0.03	9	9
Idaho	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	6,192	14	$13,760	5.0%	94%	$0.26	1	1
Idaho	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,857	12	$5,450	10%	75%	$0.34	0.53	0.53
Idaho	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	9,281	15	$3,101	60%	97%	$0.04	19	19
Idaho	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1,029	25	$2,026	75%	85%	$0.19	1	1
Idaho	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	743	20	$244	45%	85%	$0.03	0.67	0.67
Idaho	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	1,847	25	$2,320	35%	90%	$0.12	1	1
Idaho	Lodging	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	4,128	15	$8,000	10%	75%	$0.20	0.93	0.93
Idaho	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	6,350	25	$14	80%	90%	$0.00	11	11

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	196	10	$26	100%	N/A	$0.02	3	3
Idaho	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	196	10	$26	100%	N/A	$0.02	1	1
Idaho	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	5,248	10	$980	5.0%	90%	$0.03	9	9
Idaho	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$5,250	95%	45%	$0.49	18	18
Idaho	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	267	15	$52	95%	76%	$0.02	7	7
Idaho	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	6,691	20	$890	55%	45%	$0.01	61	61
Idaho	Lodging	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	141	7	$40	65%	25%	$0.05	0.00	0.00
Idaho	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	5,232	10	$980	5.0%	90%	$0.03	2	2
Idaho	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$5,250	95%	45%	$0.49	5	5
Idaho	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	266	15	$52	95%	76%	$0.02	2	2
Idaho	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	6,670	20	$890	55%	45%	$0.01	14	14
Idaho	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,443	15	$2,015	75%	N/A	$0.04	0.00	0.69
Idaho	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,351	15	$1,204	75%	N/A	$0.03	0.00	0.00
Idaho	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,443	15	$2,015	75%	N/A	$0.04	0.00	0.16
Idaho	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,351	15	$1,204	75%	N/A	$0.03	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$-0.22	0.11	0.14
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$-0.09	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$-0.37	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$-0.03	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$-0.04	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$-0.15	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$-0.01	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$-0.19	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$-0.06	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	708	10	$2,222	55%	80%	$0.45	0.18	0.18
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.36	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.40	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.37	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	278	12	$158	60%	95%	$0.07	0.08	0.10
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	255	12	$158	60%	94%	$0.07	0.07	0.09
Idaho	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,833	25	$5,000	2.5%	100%	$0.17	0.03	0.03
Idaho	Lodging	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	141	12	$159	80%	90%	$0.15	0.05	0.05
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	225	9	$224	95%	25%	$0.13	0.03	0.03
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.06	0.33	0.33

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,399	10	$186	95%	73%	$0.00	1	1
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,741	10	$465	95%	62%	$0.02	0.95	0.95
Idaho	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	354	10	$3,140	75%	95%	$1.24	0.14	0.14
Idaho	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,614	10	$381	5.0%	94%	$0.03	0.02	0.02
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$-0.22	0.03	0.03
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$-0.09	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$-0.37	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$-0.03	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$-0.04	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$-0.15	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$-0.01	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$-0.19	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$-0.06	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	701	10	$2,222	55%	80%	$0.45	0.04	0.04
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.36	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00

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Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.40	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.37	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	268	12	$152	60%	95%	$0.07	0.02	0.02
Idaho	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	245	12	$152	60%	94%	$0.07	0.02	0.02
Idaho	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,807	25	$4,000	2.5%	100%	$0.14	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	223	9	$1	95%	25%	$-0.03	0.00	0.00
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.06	0.08	0.08
Idaho	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,399	10	$186	95%	73%	$0.00	0.35	0.35
Idaho	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	350	10	$3,140	75%	95%	$1.25	0.03	0.03
Idaho	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,600	10	$381	5.0%	94%	$0.03	0.00	0.00
Idaho	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,689	15	$10,347	75%	N/A	$0.17	27	35
Idaho	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	461	15	$451	100%	N/A	$0.11	0.00	0.00
Idaho	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,689	15	$10,347	75%	N/A	$0.17	13	13
Idaho	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	461	15	$451	100%	N/A	$0.11	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$-0.22	1	1
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$-0.09	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$-0.37	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$-0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$-0.04	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$-0.15	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$-0.01	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$-0.19	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$-0.06	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	724	10	$2,222	25%	94%	$0.44	1	1
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.36	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.40	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.03	0.04
Idaho	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	278	12	$158	50%	95%	$0.07	0.93	1
Idaho	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	255	12	$158	50%	95%	$0.07	0.85	1
Idaho	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,896	25	$5,000	2.5%	100%	$0.17	0.53	0.53
Idaho	Lodging	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	144	12	$159	80%	90%	$0.14	0.77	0.77
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	230	9	$224	95%	25%	$0.12	0.42	0.42
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.06	4	4
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,399	10	$186	95%	73%	$0.00	18	18
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,741	10	$465	95%	62%	$0.02	12	12

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	362	10	$3,140	75%	95%	$1.21	2	2
Idaho	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,651	10	$381	2.5%	94%	$0.03	0.18	0.18
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$-0.22	0.46	0.46
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$-0.09	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$-0.37	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$-0.03	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$-0.04	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$-0.15	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$-0.01	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$-0.19	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$-0.06	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	704	10	$2,222	25%	94%	$0.45	0.35	0.35
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.36	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.40	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.01	0.01
Idaho	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	268	12	$152	50%	95%	$0.07	0.27	0.27
Idaho	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	245	12	$152	50%	95%	$0.07	0.24	0.24
Idaho	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,816	25	$4,000	2.5%	100%	$0.14	0.05	0.05
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	224	9	$1	95%	25%	$-0.03	0.11	0.11
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.06	1	1
Idaho	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,399	10	$186	95%	73%	$0.00	5	5
Idaho	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	352	10	$3,140	75%	95%	$1.25	0.53	0.53
Idaho	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,605	10	$381	2.5%	94%	$0.03	0.05	0.05
Idaho	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	134	4	$15	100%	N/A	$0.03	80	94
Idaho	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	207	4	$15	95%	30%	$0.02	219	219
Idaho	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	134	4	$15	100%	N/A	$0.03	13	14
Idaho	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	207	4	$15	95%	30%	$0.02	78	78
Idaho	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	422	15	$675	25%	94%	$0.18	3	3
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	885	20	$1,757	100%	N/A	$0.20	13	15
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	295	20	$585	100%	N/A	$0.20	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	658	20	$1,306	100%	N/A	$0.20	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,266	15	$8,208	5.0%	65%	$0.49	1	1
Idaho	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	422	15	$945	45%	95%	$0.26	5	5
Idaho	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	422	15	$472	75%	76%	$0.08	7	7
Idaho	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	190	12	$5,450	1.0%	75%	$2.45	0.04	0.04

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	422	40	$27,351	2.0%	**%	$5.65	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	211	12	$35	5.0%	39%	$0.01	0.12	0.12
Idaho	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	6	25	$1,422	45%	70%	$0.53	0.06	0.06
Idaho	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$684	25%	85%	$1.18	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,538	15%	83%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$783	15%	90%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	67%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	527	7	$532	90%	85%	$0.12	11	11
Idaho	Miscellaneous	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	165	10	$316	35%	68%	$0.27	1	1
Idaho	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	649	25	$1	15%	90%	$0.00	2	2
Idaho	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	552	25	$52	15%	71%	$0.01	1	1
Idaho	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	244	15	$360	25%	94%	$0.17	0.59	0.59
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	620	20	$1,581	100%	N/A	$0.26	5	5
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	206	20	$527	100%	N/A	$0.26	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	461	20	$1,175	100%	N/A	$0.26	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	244	15	$945	45%	95%	$0.44	1	1
Idaho	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	244	15	$472	75%	76%	$0.15	1	1
Idaho	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	110	12	$5,450	1.0%	75%	$4.50	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	244	40	$27,351	2.0%	**%	$9.75	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	0.85	25	$684	75%	85%	$2.46	0.00	0.00
Idaho	Miscellaneous	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	244	15	$2,700	10%	75%	$0.89	0.16	0.16
Idaho	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	376	25	$1	80%	90%	$0.00	2	2
Idaho	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	141	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	361	15	$272	100%	N/A	$0.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	2,995	15	$-5701.6316	38%	N/A	$-0.29	109	151
Idaho	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	98	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	252	15	$217	100%	N/A	$0.10	0.00	0.00
Idaho	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,091	15	$-4156.7405	38%	N/A	$-0.31	38	39
Idaho	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	486	15	$675	50%	94%	$0.16	338	338
Idaho	Miscellaneous	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,459	15	$8,208	15%	68%	$0.44	208	208
Idaho	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	486	15	$945	45%	98%	$0.22	293	293
Idaho	Miscellaneous	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	729	10	$1,701	10%	70%	$0.33	66	66
Idaho	Miscellaneous	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	486	5	$480	95%	72%	$0.23	431	431
Idaho	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,216	15	$5,625	50%	94%	$0.53	688	688
Idaho	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	486	15	$472	75%	75%	$0.08	290	290
Idaho	Miscellaneous	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	121	18	$648	45%	65%	$0.38	35	35
Idaho	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	218	12	$5,450	1.0%	75%	$2.23	1	1
Idaho	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	486	40	$27,351	2.0%	**%	$4.91	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	243	12	$35	10%	39%	$0.01	9	9
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	7	25	$1,422	45%	70%	$0.52	2	2
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$684	25%	85%	$1.18	0.35	0.35
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	145	20	$469	45%	60%	$0.22	39	39
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	87	20	$82	45%	85%	$0.06	32	32
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,538	15%	83%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$783	15%	90%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	67%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	608	7	$532	90%	85%	$0.11	456	456

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	165	10	$316	35%	68%	$0.27	34	34
Idaho	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	748	25	$1	15%	90%	$0.00	88	88
Idaho	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	636	25	$52	15%	71%	$0.01	58	58
Idaho	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	314	15	$360	50%	94%	$0.13	69	69
Idaho	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	314	15	$945	45%	98%	$0.34	60	60
Idaho	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	787	15	$5,625	50%	94%	$0.82	154	154
Idaho	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	314	15	$472	75%	75%	$0.13	66	66
Idaho	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	141	12	$5,450	1.0%	75%	$3.75	0.38	0.38
Idaho	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	314	40	$27,351	2.0%	**%	$7.58	0.00	0.00
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$684	75%	85%	$2.44	0.18	0.18
Idaho	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	56	20	$82	45%	85%	$0.11	5	5
Idaho	Miscellaneous	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	314	15	$2,700	10%	75%	$0.74	8	8
Idaho	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	484	25	$1	80%	90%	$0.00	103	103
Idaho	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	585	15	$945	45%	98%	$0.19	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	585	15	$472	75%	75%	$0.07	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	263	12	$5,450	1.0%	75%	$1.96	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	585	40	$27,351	2.0%	**%	$4.07	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	292	12	$35	10%	39%	$0.01	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	9	25	$1,422	45%	70%	$0.52	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2	25	$684	25%	85%	$1.17	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,538	15%	83%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$783	15%	90%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	67%	.	0.00	0.00
Idaho	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	515	9	$220	5.0%	N/A	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	165	10	$316	35%	68%	$0.27	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	901	25	$1	15%	90%	$0.00	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	766	25	$52	15%	71%	$0.00	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	390	15	$945	45%	98%	$0.28	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	390	15	$472	75%	75%	$0.11	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	175	12	$5,450	1.0%	75%	$3.18	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	390	40	$27,351	2.0%	**%	$6.11	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$684	75%	85%	$2.41	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	390	15	$2,700	10%	75%	$0.62	0.00	0.00
Idaho	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	344	9	$176	5.0%	N/A	$0.08	0.00	0.00
Idaho	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	601	25	$1	80%	90%	$0.00	0.00	0.00
Idaho	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	20	6	$0.43	100%	N/A	$0.00	76	76
Idaho	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	20	6	$0.43	100%	N/A	$0.00	26	26
Idaho	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	18	4	$20	100%	N/A	$0.32	3	3
Idaho	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	18	4	$20	100%	N/A	$0.32	8	8
Idaho	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.22	100%	N/A	$0.01	0.00	0.00
Idaho	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.17
Idaho	Miscellaneous	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	34	20	$4	8.8%	100%	$0.01	10	10
Idaho	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.22	100%	N/A	$0.01	0.00	0.00
Idaho	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.14
Idaho	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	563	15	$1,013	100%	N/A	$0.21	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,894	15	$2,027	100%	N/A	$0.12	81	99
Idaho	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	662	15	$675	50%	94%	$0.12	26	26
Idaho	Miscellaneous	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,356	15	$8,208	15%	68%	$0.18	44	44

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	662	15	$945	45%	98%	$0.16	23	23
Idaho	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,785	15	$472	75%	75%	$0.03	78	78
Idaho	Miscellaneous	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	446	18	$648	45%	65%	$0.15	9	9
Idaho	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,684	14	$4,644	5.0%	94%	$0.33	5	5
Idaho	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	803	12	$5,450	1.0%	75%	$0.88	0.44	0.44
Idaho	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	662	40	$27,351	2.0%	**%	$3.60	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,703	30	$60,087	5.0%	N/A	$1.47	5	7
Idaho	Miscellaneous	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,339	12	$35	10%	39%	$0.00	3	3
Idaho	Miscellaneous	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,310	25	$1,422	45%	70%	$0.11	30	30
Idaho	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	280	25	$684	25%	85%	$0.24	4	4
Idaho	Miscellaneous	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	535	20	$469	45%	60%	$0.09	10	10
Idaho	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	321	20	$82	45%	85%	$0.03	8	8
Idaho	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,190	25	$2,538	15%	83%	$0.06	36	36
Idaho	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	588	25	$783	15%	90%	$0.13	5	5
Idaho	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	67%	.	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,232	7	$532	90%	85%	$0.04	115	115
Idaho	Miscellaneous	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	165	10	$316	35%	68%	$0.27	2	2
Idaho	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,747	25	$1	15%	90%	$0.00	22	22
Idaho	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,336	25	$52	15%	71%	$0.00	14	14
Idaho	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	325	15	$810	100%	N/A	$0.29	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,018	15	$1,621	100%	N/A	$0.18	21	21
Idaho	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	339	15	$360	50%	94%	$0.12	4	4
Idaho	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	339	15	$945	45%	98%	$0.32	3	3

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Idaho	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	915	15	$472	75%	75%	$0.06	13	13
Idaho	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	863	14	$4,644	5.0%	94%	$0.64	0.98	0.98
Idaho	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	412	12	$5,450	1.0%	75%	$1.72	0.07	0.07
Idaho	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	339	40	$27,351	2.0%	**%	$7.02	0.00	0.00
Idaho	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,185	30	$30,865	5.0%	N/A	$1.26	2	2
Idaho	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	143	25	$684	75%	85%	$0.46	1	1
Idaho	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	164	20	$82	45%	85%	$0.05	1	1
Idaho	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	301	25	$783	35%	90%	$0.25	1	1
Idaho	Miscellaneous	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	915	15	$2,700	10%	75%	$0.34	1	1
Idaho	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,408	25	$1	80%	90%	$0.00	20	20
Idaho	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	252	8	$70	5.0%	95%	$0.05	53	53
Idaho	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	719	8	$353	75%	70%	$0.08	1,674	1,674
Idaho	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	597	15	$807	62%	90%	$0.16	1,478	1,478
Idaho	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	302	8	$493	90%	49%	$0.27	462	462
Idaho	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	39	13	$58	75%	95%	$0.19	123	123
Idaho	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,459	17	$1,671	5.0%	95%	$0.07	517	517
Idaho	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	252	8	$70	5.0%	95%	$0.05	17	17
Idaho	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	719	8	$353	75%	70%	$0.08	555	555
Idaho	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	597	15	$807	62%	90%	$0.16	456	456
Idaho	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	302	8	$493	90%	49%	$0.27	153	153
Idaho	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	39	13	$58	75%	95%	$0.19	37	37
Idaho	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,459	17	$1,671	5.0%	95%	$0.07	143	143
Idaho	Miscellaneous	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	155	10	$224	5.0%	95%	$0.21	26	26
Idaho	Miscellaneous	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,497	8	$2,700	20%	84%	$0.30	915	915

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,123	8	$2,025	20%	84%	$0.30	332	332
Idaho	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	81	6	$30	10%	80%	$0.05	23	23
Idaho	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	50	6	$25	5.0%	80%	$0.09	7	7
Idaho	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	541	13	$628	100%	N/A	$0.15	1,224	1,280
Idaho	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	382	13	$196	100%	N/A	$0.03	0.00	0.00
Idaho	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	970	13	$6,243	25%	N/A	$0.83	730	764
Idaho	Miscellaneous	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	708	8	$493	75%	49%	$0.12	907	907
Idaho	Miscellaneous	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	495	15	$226	100%	N/A	$0.12	0.00	0.00
Idaho	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	606	15	$982	95%	N/A	$0.09	812	827
Idaho	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	541	20	$7,202	50%	N/A	$1.08	21	22
Idaho	Miscellaneous	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	345	13	$-8.0670446	25%	N/A	$-0.14	0.00	0.00
Idaho	Miscellaneous	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	173	15	$4,560	100%	N/A	$2.23	0.00	0.00
Idaho	Miscellaneous	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	228	8	$493	75%	49%	$0.36	351	351
Idaho	Miscellaneous	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	187	11	$73	95%	50%	$0.05	395	395
Idaho	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	37	13	$32	95%	98%	$0.11	154	154
Idaho	Miscellaneous	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	202	10	$224	5.0%	95%	$0.16	12	12
Idaho	Miscellaneous	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,224	8	$2,700	20%	84%	$0.37	271	271
Idaho	Miscellaneous	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	918	8	$2,025	20%	84%	$0.37	0.00	0.00
Idaho	Miscellaneous	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	63	6	$15	10%	80%	$0.01	6	6

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Idaho	Miscellaneous	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	28	6	$11	10%	80%	$0.06	3	3
Idaho	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	37	13	$32	95%	98%	$0.11	44	44
Idaho	Miscellaneous	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,014	13	$2,674	100%	N/A	$0.33	1,338	1,342
Idaho	Miscellaneous	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	923	8	$493	75%	49%	$0.09	438	438
Idaho	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,117	4	$37	85%	N/A	$-0.01	0.00	792
Idaho	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,727	1	$24	100%	N/A	$0.01	0.00	0.00
Idaho	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	734	1	$19	100%	N/A	$-0.02	0.00	0.00
Idaho	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,143	12	$462	15%	N/A	$0.01	100	838
Idaho	Miscellaneous	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	193	8	$493	75%	49%	$0.42	113	113
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.80	10%	90%	$0.05	1	1
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	31	4	$0.00	10%	45%	$0.00	6	6
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	64	64
Idaho	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$0.40	5.0%	86%	$0.01	1	1
Idaho	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	54	4	$10	60%	90%	$0.06	129	129
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.80	10%	90%	$0.05	0.39	0.39
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	31	4	$0.00	10%	45%	$0.00	2	2
Idaho	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	20	20
Idaho	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$0.40	5.0%	86%	$0.01	0.66	0.66
Idaho	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	54	4	$10	60%	90%	$0.06	44	44
Idaho	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	63	6	$68	100%	N/A	$0.22	8	8
Idaho	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	63	6	$68	100%	N/A	$0.22	4	4
Idaho	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	39	6	$4	100%	N/A	$0.02	15	15
Idaho	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	39	6	$4	100%	N/A	$0.02	0.00	0.00
Idaho	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	159	15	$38	2.5%	77%	$0.03	1	1

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Idaho	Miscellaneous	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	110	15	$11	2.5%	95%	$0.01	1	1
Idaho	Miscellaneous	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	8	15	$5	2.5%	95%	$0.08	0.09	0.09
Idaho	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	107	10	$89	1.0%	80%	$0.12	0.42	0.42
Idaho	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	146	10	$121	1.0%	80%	$0.12	0.57	0.57
Idaho	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	15	8	$1	2.5%	95%	$0.02	0.18	0.18
Idaho	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	39	5	$6	5.0%	85%	$0.04	0.81	0.81
Idaho	Miscellaneous	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	60	13	$8	2.5%	90%	$0.02	0.65	0.65
Idaho	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	287	15	$71	1.0%	98%	$0.03	1	1
Idaho	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	3	10	$0.57	1.0%	85%	$0.03	0.01	0.01
Idaho	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	16	15	$17	2.5%	95%	$0.13	0.18	0.18
Idaho	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	14	15	$12	2.5%	95%	$0.10	0.16	0.16
Idaho	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	159	15	$38	2.5%	77%	$0.03	0.44	0.44
Idaho	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	107	10	$89	1.0%	80%	$0.12	0.13	0.13
Idaho	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	146	10	$121	1.0%	80%	$0.12	0.18	0.18
Idaho	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	15	8	$1	2.5%	95%	$0.02	0.06	0.06
Idaho	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	39	5	$6	5.0%	85%	$0.04	0.27	0.27
Idaho	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	287	15	$71	1.0%	98%	$0.03	0.41	0.41
Idaho	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	3	10	$0.57	1.0%	85%	$0.03	0.00	0.00
Idaho	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	16	15	$17	2.5%	95%	$0.13	0.05	0.05
Idaho	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	14	15	$12	2.5%	95%	$0.10	0.04	0.04
Idaho	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	51	20	$140	100%	N/A	$0.27	0.00	0.00
Idaho	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	58	20	$189	100%	N/A	$0.33	52	64
Idaho	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	45	20	$11	100%	N/A	$0.02	0.00	0.00
Idaho	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	14	20	$5	100%	N/A	$0.03	0.00	0.00
Idaho	Miscellaneous	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	355	20	$37	8.8%	100%	$0.01	102	102
Idaho	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	51	20	$140	100%	N/A	$0.27	0.00	0.00

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Idaho	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	58	20	$189	100%	N/A	$0.33	49	50
Idaho	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	45	20	$11	100%	N/A	$0.02	0.00	0.00
Idaho	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	14	20	$5	100%	N/A	$0.03	0.00	0.00
Idaho	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	8	9	$1	100%	N/A	$0.02	29	30
Idaho	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	29	4	$109	10%	50%	$1.05	5	5
Idaho	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	8	9	$1	100%	N/A	$0.02	10	10
Idaho	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	29	4	$109	10%	50%	$1.05	1	1
Idaho	Miscellaneous	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,305	15	$8,208	15%	68%	$0.15	171	171
Idaho	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,768	15	$472	75%	75%	$0.03	307	307
Idaho	Miscellaneous	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	442	18	$648	45%	65%	$0.13	37	37
Idaho	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,652	14	$4,644	5.0%	94%	$0.21	36	36
Idaho	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	795	12	$5,450	1.0%	75%	$0.77	1	1
Idaho	Miscellaneous	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,768	12	$35	10%	39%	$0.00	19	19
Idaho	Miscellaneous	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,058	25	$1,422	45%	70%	$0.07	186	186
Idaho	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	440	25	$684	25%	85%	$0.15	25	25
Idaho	Miscellaneous	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	530	20	$469	45%	60%	$0.08	39	39
Idaho	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	318	20	$82	45%	85%	$0.02	33	33
Idaho	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,179	25	$2,538	15%	83%	$0.04	207	207
Idaho	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	791	25	$783	15%	90%	$0.10	27	27
Idaho	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Idaho	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	67%	.	0.00	0.00
Idaho	Miscellaneous	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,210	7	$532	90%	85%	$0.04	436	436
Idaho	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,720	25	$1	15%	90%	$0.00	85	85
Idaho	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,314	25	$52	15%	71%	$0.00	55	55
Idaho	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	845	15	$472	75%	75%	$0.05	46	46
Idaho	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,267	14	$4,644	5.0%	94%	$0.44	5	5
Idaho	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	380	12	$5,450	1.0%	75%	$1.53	0.27	0.27

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	210	25	$684	75%	85%	$0.32	9	9
Idaho	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	152	20	$82	45%	85%	$0.04	3	3
Idaho	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	378	25	$783	35%	90%	$0.20	8	8
Idaho	Miscellaneous	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	845	15	$2,700	10%	75%	$0.30	5	5
Idaho	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,300	25	$1	80%	90%	$0.00	69	69
Idaho	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	130	10	$17	100%	N/A	$0.02	252	252
Idaho	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	130	10	$17	100%	N/A	$0.02	97	97
Idaho	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	1,355	10	$331	5.0%	90%	$0.03	270	270
Idaho	Miscellaneous	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,033	15	$8,208	15%	68%	$0.46	903	903
Idaho	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	93	18	$200	95%	65%	$0.23	255	255
Idaho	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	69	15	$17	95%	76%	$0.03	209	209
Idaho	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,728	20	$300	55%	45%	$0.02	1,791	1,791
Idaho	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	355	15	$985	13%	77%	$0.32	138	138
Idaho	Miscellaneous	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	47	7	$13	65%	25%	$0.05	0.00	0.00
Idaho	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	108	18	$1,705	5.0%	59%	$1.65	14	14
Idaho	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	1,128	10	$331	5.0%	90%	$0.04	72	72
Idaho	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	559	18	$1,200	95%	50%	$0.23	338	338
Idaho	Miscellaneous	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	2,025	50	$6,750	16%	98%	$0.28	309	309
Idaho	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	57	15	$17	95%	76%	$0.04	50	50
Idaho	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,438	20	$300	55%	45%	$0.02	328	328
Idaho	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	296	15	$985	13%	77%	$0.38	33	33

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	90	18	$1,705	5.0%	59%	$1.98	3	3
Idaho	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	627	15	$241	75%	N/A	$0.06	0.12	8
Idaho	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	621	15	$144	75%	N/A	$0.04	0.00	0.00
Idaho	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	627	15	$241	75%	N/A	$0.06	0.11	1
Idaho	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	621	15	$144	75%	N/A	$0.04	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$-0.22	0.02	0.03
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$-0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$-0.35	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$-0.02	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$-0.03	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$-0.14	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$-0.00	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$-0.17	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$-0.05	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	52	10	$750	55%	94%	$2.04	2	2
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.36	0.00	0.00

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Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.01	0.01
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.40	0.00	0.01
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.37	0.09	0.12
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	95%	$0.07	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	94%	$0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	210	25	$800	2.5%	100%	$0.37	0.48	0.48
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	0.68	0.68
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	16	9	$7	95%	25%	$0.04	0.37	0.37
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.06	17	17
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	60	10	$6	95%	73%	$-0.13	3	3
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	48	10	$15	95%	62%	$-0.11	2	2
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$105	75%	95%	$0.55	1	1
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	120	10	$89	2.5%	94%	$0.11	0.18	0.18
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$-0.22	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$-0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$-0.35	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$-0.02	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$-0.03	0.00	0.00

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Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$-0.14	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$-0.00	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$-0.17	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$-0.05	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$750	55%	94%	$2.06	0.63	0.63
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.36	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.40	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.37	0.02	0.02
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	95%	$0.07	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	94%	$0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	208	25	$640	2.5%	100%	$0.30	0.04	0.04
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.05	95%	25%	$-0.03	0.09	0.09
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.06	4	4
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	60	10	$6	95%	73%	$-0.13	0.99	0.99
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$105	75%	95%	$0.55	0.43	0.43
Idaho	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	118	10	$89	2.5%	94%	$0.11	0.04	0.04
Idaho	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	571	15	$1,241	75%	N/A	$0.28	363	435

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Idaho	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	34	15	$54	100%	N/A	$0.18	0.00	0.00
Idaho	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	571	15	$1,241	75%	N/A	$0.28	162	166
Idaho	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	34	15	$54	100%	N/A	$0.18	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$-0.22	0.35	0.41
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$-0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$-0.35	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$-0.02	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$-0.03	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$-0.14	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$-0.00	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$-0.17	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$-0.05	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	53	10	$750	25%	94%	$1.99	15	15
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.36	0.00	0.06
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.17	0.20

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.40	0.00	0.17
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.37	1	1
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.07	0.25	0.29
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.08	0.23	0.27
Idaho	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	215	25	$800	2.5%	100%	$0.36	6	6
Idaho	Miscellaneous	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	10	12	$25	80%	90%	$0.31	9	9
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	17	9	$7	95%	25%	$0.04	5	5
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.06	232	232
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	60	10	$6	95%	73%	$-0.13	51	51
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	48	10	$15	95%	62%	$-0.11	35	35
Idaho	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	26	10	$105	75%	95%	$0.53	23	23
Idaho	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	122	10	$89	2.5%	94%	$0.10	2	2
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$-0.22	0.10	0.10
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$-0.08	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$-0.35	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$-0.02	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$-0.03	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$-0.14	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$-0.00	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$-0.17	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$-0.05	0.00	0.00
Idaho	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	52	10	$750	25%	94%	$2.05	4	4
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.36	0.00	0.01
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.05	0.05
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.40	0.00	0.03
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.37	0.39	0.39
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.07	0.07	0.07
Idaho	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.08	0.06	0.06
Idaho	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	209	25	$640	2.5%	100%	$0.30	0.71	0.71
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	16	9	$0.05	95%	25%	$-0.03	1	1
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.06	69	69
Idaho	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	60	10	$6	95%	73%	$-0.13	14	14
Idaho	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	26	10	$105	75%	95%	$0.55	6	6
Idaho	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	119	10	$89	2.5%	94%	$0.11	0.70	0.70
Idaho	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	49	4	$5	100%	N/A	$0.03	1	1
Idaho	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	49	4	$5	100%	N/A	$0.03	0.28	0.28
Idaho	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	4,663	12	$786	90%	90%	$0.02	149	149

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	420	12	$1,097	70%	86%	$0.34	9	9
Idaho	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	943	12	$229	95%	85%	$0.03	30	30
Idaho	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	1,644	12	$931	40%	45%	$0.07	0.00	0.00
Idaho	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	2,680	12	$1,713	35%	21%	$0.08	7	7
Idaho	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	4,630	12	$2,608	39%	75%	$0.07	52	52
Idaho	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	4,663	12	$786	90%	90%	$0.02	47	47
Idaho	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	420	12	$1,097	70%	86%	$0.34	3	3
Idaho	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	943	12	$229	95%	85%	$0.03	9	9
Idaho	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	1,644	12	$931	40%	45%	$0.07	0.00	0.00
Idaho	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	2,680	12	$1,713	35%	21%	$0.08	2	2
Idaho	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	4,630	12	$2,608	39%	75%	$0.07	16	16
Idaho	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	263	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	673	15	$457	100%	N/A	$0.08	0.00	0.00
Idaho	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,580	15	$-9571.1389	52%	N/A	$-0.26	20	26
Idaho	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	163	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	416	15	$365	100%	N/A	$0.10	0.00	0.00
Idaho	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,451	15	$-6977.7817	52%	N/A	$-0.31	6	6
Idaho	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	832	15	$881	45%	98%	$0.12	43	43
Idaho	Restaurant	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,248	10	$2,855	10%	50%	$0.33	7	7
Idaho	Restaurant	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	832	5	$805	95%	72%	$0.23	64	64
Idaho	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,081	15	$5,245	50%	94%	$0.29	102	102
Idaho	Restaurant	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	208	18	$604	45%	65%	$0.28	5	5

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Idaho	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	374	12	$5,450	65%	75%	$1.76	16	16
Idaho	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	832	40	$25,507	2.0%	**%	$2.67	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	416	12	$102	40%	39%	$0.03	5	5
Idaho	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	13	25	$1,326	45%	56%	$1.52	0.30	0.30
Idaho	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2	25	$637	25%	85%	$3.42	0.05	0.05
Idaho	Restaurant	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	249	20	$438	45%	55%	$0.16	5	5
Idaho	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	149	20	$76	45%	85%	$0.05	5	5
Idaho	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,366	15%	84%	.	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$730	15%	90%	.	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$608	10%	85%	.	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,818	10%	68%	.	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,040	7	$496	90%	85%	$0.08	70	70
Idaho	Restaurant	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	412	10	$906	35%	68%	$0.31	7	7
Idaho	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,280	25	$3	15%	90%	$0.00	13	13
Idaho	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,089	25	$149	15%	72%	$0.01	9	9
Idaho	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	480	15	$881	45%	98%	$0.21	7	7
Idaho	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,202	15	$5,245	50%	94%	$0.50	19	19
Idaho	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	216	12	$5,450	65%	75%	$3.12	3	3
Idaho	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	480	40	$25,507	2.0%	**%	$4.63	0.00	0.00
Idaho	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$637	75%	85%	$8.09	0.02	0.02
Idaho	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	86	20	$76	45%	85%	$0.08	0.77	0.77
Idaho	Restaurant	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	480	15	$2,518	10%	75%	$0.57	1	1
Idaho	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	739	25	$3	80%	90%	$0.00	13	13
Idaho	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	78	6	$1	100%	N/A	$0.00	13	13
Idaho	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	78	6	$1	100%	N/A	$0.00	4	4
Idaho	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	6	4	$7	100%	N/A	$0.32	0.06	0.06
Idaho	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	6	4	$7	100%	N/A	$0.32	0.14	0.14
Idaho	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00

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Idaho	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	22	20	$0.59	100%	N/A	$0.00	0.00	0.04
Idaho	Restaurant	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	182	20	$22	8.8%	100%	$0.01	2	2
Idaho	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Idaho	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	22	20	$0.59	100%	N/A	$0.00	0.00	0.03
Idaho	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	706	15	$1,701	100%	N/A	$0.28	0.00	0.00
Idaho	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,010	15	$3,402	100%	N/A	$0.19	0.00	0.00
Idaho	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,221	15	$881	45%	98%	$0.08	0.00	0.00
Idaho	Restaurant	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	516	18	$604	45%	65%	$0.12	0.00	0.00
Idaho	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,266	14	$4,330	5.0%	94%	$0.41	0.00	0.00
Idaho	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	929	12	$5,450	65%	75%	$0.76	0.00	0.00
Idaho	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,221	40	$25,507	2.0%	**%	$1.82	0.00	0.00
Idaho	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,845	30	$866	5.0%	N/A	$1.89	0.00	0.00
Idaho	Restaurant	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,549	12	$102	40%	39%	$0.01	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	997	25	$1,326	45%	56%	$0.13	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	213	25	$637	25%	85%	$0.29	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	619	20	$438	45%	55%	$0.07	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	371	20	$76	45%	85%	$0.02	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,978	25	$2,366	15%	84%	$0.12	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	387	25	$730	15%	90%	$0.18	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$608	10%	85%	.	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,818	10%	68%	.	0.00	0.00
Idaho	Restaurant	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,582	7	$496	90%	85%	$0.04	0.00	0.00
Idaho	Restaurant	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	412	10	$906	35%	68%	$0.31	0.00	0.00
Idaho	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	3,178	25	$3	15%	90%	$0.00	0.00	0.00
Idaho	Restaurant	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,703	25	$149	15%	72%	$0.01	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	371	15	$1,361	100%	N/A	$0.42	0.00	0.00
Idaho	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	965	15	$2,722	100%	N/A	$0.32	0.00	0.00
Idaho	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	567	15	$881	45%	98%	$0.18	0.00	0.00
Idaho	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	589	14	$4,330	5.0%	94%	$0.88	0.00	0.00
Idaho	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	432	12	$5,450	65%	75%	$1.64	0.00	0.00
Idaho	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	567	40	$25,507	2.0%	**%	$3.92	0.00	0.00
Idaho	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,601	30	$51,813	5.0%	N/A	$1.78	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	99	25	$637	75%	85%	$0.63	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	172	20	$76	45%	85%	$0.04	0.00	0.00
Idaho	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	180	25	$730	35%	90%	$0.40	0.00	0.00
Idaho	Restaurant	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	960	15	$2,518	10%	75%	$0.30	0.00	0.00
Idaho	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,477	25	$3	80%	90%	$0.00	0.00	0.00
Idaho	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	235	8	$65	5.0%	95%	$0.05	2	2
Idaho	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,287	8	$341	75%	70%	$0.04	132	132
Idaho	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,069	15	$1,445	62%	90%	$0.16	117	117
Idaho	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	540	8	$460	45%	61%	$0.14	22	22
Idaho	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$56	75%	95%	$0.19	5	5
Idaho	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,293	17	$1,558	5.0%	95%	$0.07	21	21
Idaho	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	235	8	$65	5.0%	95%	$0.05	0.72	0.72
Idaho	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,287	8	$341	75%	70%	$0.04	44	44
Idaho	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,069	15	$1,445	62%	90%	$0.16	36	36
Idaho	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	540	8	$460	45%	61%	$0.14	7	7
Idaho	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$56	75%	95%	$0.19	1	1
Idaho	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,293	17	$1,558	5.0%	95%	$0.07	5	5

Table C-2.2. Commercial Measure Details

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Idaho	Restaurant	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	228	10	$209	0.5%	95%	$0.13	0.17	0.17
Idaho	Restaurant	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,279	8	$2,518	5.0%	98%	$0.18	18	18
Idaho	Restaurant	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,709	8	$1,888	5.0%	98%	$0.18	13	13
Idaho	Restaurant	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	845	6	$313	25%	80%	$0.05	27	27
Idaho	Restaurant	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	518	6	$263	25%	80%	$0.09	17	17
Idaho	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	582	13	$236	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	980	13	$735	100%	N/A	$0.09	101	103
Idaho	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,647	13	$6,628	25%	N/A	$0.53	56	58
Idaho	Restaurant	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,040	8	$460	5.0%	61%	$0.07	4	4
Idaho	Restaurant	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	149	15	$52	100%	N/A	$0.30	0.00	0.00
Idaho	Restaurant	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	182	15	$230	95%	N/A	$-0.26	11	11
Idaho	Restaurant	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	163	16	$1,691	50%	N/A	$0.12	0.42	0.43
Idaho	Restaurant	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	104	10	$-2.7203428	25%	N/A	$-0.57	0.00	0.00
Idaho	Restaurant	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	52	15	$1,071	100%	N/A	$-0.86	0.00	0.00
Idaho	Restaurant	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	68	8	$460	5.0%	61%	$1.13	0.38	0.38
Idaho	Restaurant	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	441	11	$171	95%	50%	$0.05	41	41
Idaho	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	88	13	$75	95%	98%	$0.11	16	16
Idaho	Restaurant	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	387	10	$209	0.5%	95%	$0.08	0.10	0.10
Idaho	Restaurant	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,983	8	$2,518	5.0%	98%	$0.21	5	5

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Idaho	Restaurant	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,487	8	$1,888	5.0%	98%	$0.21	4	4
Idaho	Restaurant	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	653	6	$159	25%	80%	$0.01	8	8
Idaho	Restaurant	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	295	6	$115	25%	80%	$0.06	3	3
Idaho	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	88	13	$75	95%	98%	$0.11	4	4
Idaho	Restaurant	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,551	13	$5,857	100%	N/A	$0.47	93	93
Idaho	Restaurant	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,765	8	$460	5.0%	61%	$0.04	3	3
Idaho	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	27,918	4	$262	87%	N/A	$0.00	0.00	0.00
Idaho	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	24,413	1	$173	100%	N/A	$0.00	0.00	0.00
Idaho	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,195	1	$137	100%	N/A	$-0.00	0.00	0.00
Idaho	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	28,152	12	$3,247	15%	N/A	$0.01	22	88
Idaho	Restaurant	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	897	8	$460	5.0%	61%	$0.09	3	3
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.48	10%	90%	$0.05	0.03	0.03
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	120	4	$0.00	10%	45%	$0.00	1	1
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	71	10	$0.35	95%	75%	$0.00	10	10
Idaho	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	704	10	$498	95%	86%	$0.10	112	112
Idaho	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$0.37	5.0%	86%	$0.02	0.05	0.05
Idaho	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	50	4	$10	60%	90%	$0.06	5	5
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.48	10%	90%	$0.05	0.01	0.01
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	120	4	$0.00	10%	45%	$0.00	0.36	0.36
Idaho	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	71	10	$0.35	95%	75%	$0.00	3	3
Idaho	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	704	10	$498	95%	86%	$0.10	36	36
Idaho	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$0.37	5.0%	86%	$0.02	0.01	0.01
Idaho	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	50	4	$10	60%	90%	$0.06	1	1

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Idaho	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	244	6	$266	100%	N/A	$0.22	1	1
Idaho	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	244	6	$266	100%	N/A	$0.22	0.71	0.71
Idaho	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	13	6	$1	100%	N/A	$0.02	0.23	0.23
Idaho	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	13	6	$1	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	990	8	$85	25%	45%	$0.01	16	16
Idaho	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	1,643	15	$399	10%	77%	$0.03	18	18
Idaho	Restaurant	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	1,135	15	$123	10%	95%	$0.01	16	16
Idaho	Restaurant	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	84	15	$55	10%	95%	$0.08	1	1
Idaho	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,111	10	$922	10%	80%	$0.12	13	13
Idaho	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,509	10	$1,250	10%	80%	$0.12	18	18
Idaho	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	294	10	$3,300	5.0%	68%	$1.60	1	1
Idaho	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	163	8	$15	1.0%	95%	$0.02	0.23	0.23
Idaho	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	192	12	$181	95%	77%	$0.12	21	21
Idaho	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	408	5	$65	30%	85%	$0.04	15	15
Idaho	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	1,377	3	$216	10%	85%	$0.06	17	17
Idaho	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	151	12	$-35.48929	95%	81%	$-0.03	17	17
Idaho	Restaurant	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	622	13	$88	10%	90%	$0.02	8	8
Idaho	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	274	4	$198	5.0%	20%	$0.20	0.39	0.39
Idaho	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	31	10	$5	2.5%	85%	$0.03	0.10	0.10
Idaho	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	165	15	$184	35%	95%	$0.13	8	8
Idaho	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	155	15	$140	35%	95%	$0.10	7	7
Idaho	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	990	8	$85	25%	45%	$0.01	5	5
Idaho	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	1,643	15	$399	10%	77%	$0.03	5	5
Idaho	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	1,111	10	$922	10%	80%	$0.12	4	4
Idaho	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	1,509	10	$1,250	10%	80%	$0.12	5	5
Idaho	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	294	10	$3,300	5.0%	68%	$1.60	0.47	0.47
Idaho	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	163	8	$15	1.0%	95%	$0.02	0.07	0.07

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	192	12	$181	95%	77%	$0.12	6	6
Idaho	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	408	5	$65	30%	85%	$0.04	5	5
Idaho	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	688	3	$83	5.0%	90%	$0.04	1	1
Idaho	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	151	12	$-35.48929	95%	81%	$-0.03	5	5
Idaho	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	274	4	$198	5.0%	20%	$0.20	0.13	0.13
Idaho	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	31	10	$5	2.5%	85%	$0.03	0.03	0.03
Idaho	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	165	15	$184	35%	95%	$0.13	2	2
Idaho	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	155	15	$140	35%	95%	$0.10	2	2
Idaho	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	277	20	$754	100%	N/A	$0.27	0.00	0.00
Idaho	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	311	20	$1,011	100%	N/A	$0.33	12	15
Idaho	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	243	20	$59	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	77	20	$27	100%	N/A	$0.03	0.00	0.00
Idaho	Restaurant	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,901	20	$201	8.8%	100%	$0.01	24	24
Idaho	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	277	20	$754	100%	N/A	$0.27	0.00	0.00
Idaho	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	311	20	$1,011	100%	N/A	$0.33	11	12
Idaho	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	243	20	$59	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	77	20	$27	100%	N/A	$0.03	0.00	0.00
Idaho	Restaurant	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	276	18	$604	45%	65%	$0.17	1	1
Idaho	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,658	14	$4,330	5.0%	94%	$0.31	1	1
Idaho	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	497	12	$5,450	65%	75%	$1.04	4	4
Idaho	Restaurant	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,105	12	$102	40%	39%	$0.01	3	3
Idaho	Restaurant	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,286	25	$1,326	45%	56%	$0.10	5	5
Idaho	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	275	25	$637	25%	85%	$0.22	0.98	0.98
Idaho	Restaurant	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	331	20	$438	45%	55%	$0.10	1	1
Idaho	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	198	20	$76	45%	85%	$0.03	1	1
Idaho	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,658	25	$2,366	15%	84%	$0.09	5	5
Idaho	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	494	25	$730	15%	90%	$0.14	1	1
Idaho	Restaurant	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$608	10%	85%	.	0.00	0.00

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Idaho	Restaurant	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,818	10%	68%	.	0.00	0.00
Idaho	Restaurant	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,381	7	$496	90%	85%	$0.05	16	16
Idaho	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,700	25	$3	15%	90%	$0.00	3	3
Idaho	Restaurant	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,446	25	$149	15%	72%	$0.01	2	2
Idaho	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	653	14	$4,330	5.0%	94%	$0.79	0.17	0.17
Idaho	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	196	12	$5,450	65%	75%	$2.33	0.54	0.54
Idaho	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	108	25	$637	75%	85%	$0.57	0.28	0.28
Idaho	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	78	20	$76	45%	85%	$0.06	0.12	0.12
Idaho	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	194	25	$730	35%	90%	$0.37	0.24	0.24
Idaho	Restaurant	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	435	15	$2,518	10%	75%	$0.43	0.16	0.16
Idaho	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	670	25	$3	80%	90%	$0.00	2	2
Idaho	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,865	18	$6,250	95%	25%	$0.35	86	86
Idaho	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	106	15	$16	95%	76%	$0.02	14	14
Idaho	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,671	20	$280	55%	45%	$0.01	123	123
Idaho	Restaurant	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	44	7	$12	65%	25%	$0.05	0.00	0.00
Idaho	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,865	18	$6,250	95%	25%	$0.35	25	25
Idaho	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	100	15	$16	95%	76%	$0.02	4	4
Idaho	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,516	20	$280	55%	45%	$0.01	27	27
Idaho	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	12,491	15	$564	75%	N/A	$0.01	0.07	4
Idaho	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	12,355	15	$337	75%	N/A	$0.01	0.00	0.00
Idaho	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	12,491	15	$564	75%	N/A	$0.01	0.06	1
Idaho	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	12,355	15	$337	75%	N/A	$0.01	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,047	10	$699	75%	94%	$0.10	1	1

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Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	20%	35%	$0.34	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	20%	35%	$0.04	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	20%	55%	$0.39	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	20%	55%	$0.37	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	75%	95%	$0.07	4	5
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	75%	94%	$0.07	4	5
Idaho	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,191	25	$1,400	2.5%	100%	$0.03	0.20	0.20
Idaho	Restaurant	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	209	12	$44	80%	90%	$0.03	0.29	0.29
Idaho	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	333	9	$17	95%	25%	$-0.02	0.20	0.20
Idaho	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.06	0.45	0.45
Idaho	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	523	10	$247	75%	95%	$0.04	0.94	0.94
Idaho	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,389	10	$921	45%	94%	$0.06	1	1
Idaho	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,038	10	$699	75%	94%	$0.10	0.46	0.46
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	20%	35%	$0.34	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	20%	35%	$0.04	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	20%	55%	$0.39	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	20%	55%	$0.37	0.00	0.00
Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	75%	95%	$0.07	1	1

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Idaho	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	75%	94%	$0.07	1	1
Idaho	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,153	25	$1,120	2.5%	100%	$0.03	0.02	0.02
Idaho	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	330	9	$0.12	95%	25%	$-0.03	0.05	0.05
Idaho	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.06	0.12	0.12
Idaho	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	519	10	$247	75%	95%	$0.04	0.23	0.23
Idaho	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,367	10	$921	45%	94%	$0.06	0.47	0.47
Idaho	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	11,376	15	$2,897	75%	N/A	$0.03	192	232
Idaho	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	682	15	$126	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	11,376	15	$2,897	75%	N/A	$0.03	83	85
Idaho	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	682	15	$126	100%	N/A	$0.02	0.00	0.00
Idaho	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,071	10	$699	75%	94%	$0.09	25	25
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	75%	35%	$0.34	0.00	0.01
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	75%	35%	$0.04	0.04	0.04
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	75%	55%	$0.39	0.00	0.03
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	75%	55%	$0.37	0.30	0.34
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	85%	95%	$0.07	71	83
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	85%	95%	$0.07	65	76
Idaho	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,285	25	$1,400	2.5%	100%	$0.03	2	2

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Idaho	Restaurant	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	214	12	$44	80%	90%	$0.03	3	3
Idaho	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	340	9	$17	95%	25%	$-0.02	2	2
Idaho	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.06	5	5
Idaho	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	535	10	$247	75%	95%	$0.04	12	12
Idaho	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,443	10	$921	25%	94%	$0.05	13	13
Idaho	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,041	10	$699	75%	94%	$0.10	6	6
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	75%	35%	$0.34	0.00	0.00
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	75%	35%	$0.04	0.01	0.01
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	75%	55%	$0.39	0.00	0.00
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	75%	55%	$0.37	0.09	0.09
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	85%	95%	$0.07	20	20
Idaho	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	85%	95%	$0.07	18	18
Idaho	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,166	25	$1,120	2.5%	100%	$0.03	0.29	0.29
Idaho	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	331	9	$0.12	95%	25%	$-0.03	0.74	0.74
Idaho	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.06	1	1
Idaho	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	520	10	$247	75%	95%	$0.04	3	3
Idaho	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,374	10	$921	25%	94%	$0.06	3	3
Idaho	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	3,620	4	$413	100%	N/A	$0.03	160	187
Idaho	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	5,585	4	$413	95%	30%	$0.02	436	436
Idaho	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	3,620	4	$413	100%	N/A	$0.03	27	28

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	5,585	4	$413	95%	30%	$0.02	156	156
Idaho	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	104	12	$17	90%	90%	$0.02	4	4
Idaho	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	9	12	$24	35%	90%	$0.34	0.16	0.16
Idaho	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	32	12	$7	95%	85%	$0.03	1	1
Idaho	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	56	12	$32	26%	40%	$0.07	0.00	0.00
Idaho	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	92	12	$59	75%	21%	$0.08	0.79	0.79
Idaho	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	159	12	$89	14%	75%	$0.07	0.91	0.91
Idaho	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	104	12	$17	90%	90%	$0.02	1	1
Idaho	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	9	12	$24	35%	90%	$0.34	0.05	0.05
Idaho	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	32	12	$7	95%	85%	$0.03	0.45	0.45
Idaho	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	56	12	$32	26%	40%	$0.07	0.00	0.00
Idaho	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	92	12	$59	75%	21%	$0.08	0.25	0.25
Idaho	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	159	12	$89	14%	75%	$0.07	0.28	0.28
Idaho	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	566	15	$4,871	25%	94%	$0.99	7	7
Idaho	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	70	5	$3,319	95%	81%	$10.95	3	3
Idaho	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	428	10	$20,432	25%	70%	$6.83	4	4
Idaho	School	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	283	15	$47,438	45%	90%	$19.25	6	6
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,279	20	$8,420	100%	N/A	$0.66	24	35
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	213	20	$1,403	100%	N/A	$0.66	0.00	0.00
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	781	20	$5,146	100%	N/A	$0.66	0.00	0.00
Idaho	School	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,699	15	$59,235	15%	68%	$0.16	9	9
Idaho	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	566	15	$6,819	65%	98%	$1.38	18	18
Idaho	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	453	7	$2,525	10%	94%	$1.02	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	792	15	$226	65%	35%	$0.03	8	8
Idaho	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	226	13	$1,828	75%	65%	$1.00	5	5
Idaho	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	566	15	$3,409	75%	75%	$0.03	14	14
Idaho	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	254	12	$5,450	25%	75%	$0.11	2	2
Idaho	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	566	40	$97,388	2.0%	**%	$30.41	0.00	0.00
Idaho	School	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	283	12	$513	10%	39%	$0.00	0.47	0.47
Idaho	School	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	21	25	$10,262	45%	70%	$0.04	0.29	0.29
Idaho	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$4,936	25%	85%	$0.15	0.01	0.01
Idaho	School	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	84%	.	0.00	0.00
Idaho	School	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Idaho	School	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Idaho	School	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	72%	.	0.00	0.00
Idaho	School	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (ID State Code)	No Insulation	Per Building	Existing	84	15	$400	65%	45%	$0.54	1	1
Idaho	School	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	707	7	$3,841	90%	85%	$0.04	23	23
Idaho	School	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	2,052	10	$4,529	35%	68%	$0.32	18	18
Idaho	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	871	25	$17	15%	90%	$0.00	4	4
Idaho	School	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	741	25	$749	15%	76%	$0.00	2	2
Idaho	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	404	15	$2,598	25%	94%	$0.74	1	1
Idaho	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	50	5	$3,319	95%	81%	$15.36	0.71	0.71
Idaho	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	305	10	$18,389	25%	70%	$8.61	0.91	0.91
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	1,074	20	$7,578	100%	N/A	$0.71	14	14
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	179	20	$1,263	100%	N/A	$0.71	0.00	0.00
Idaho	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	656	20	$4,631	100%	N/A	$0.71	0.00	0.00
Idaho	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	404	15	$6,819	65%	98%	$1.94	4	4

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Idaho	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	323	7	$2,273	10%	94%	$1.29	0.50	0.50
Idaho	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	161	13	$1,645	75%	65%	$1.27	1	1
Idaho	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	404	15	$3,409	75%	75%	$0.05	3	3
Idaho	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	181	12	$5,450	25%	75%	$0.19	0.49	0.49
Idaho	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	404	40	$97,388	2.0%	**%	$42.62	0.00	0.00
Idaho	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$4,936	75%	85%	$0.24	0.00	0.00
Idaho	School	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	404	15	$19,485	10%	75%	$0.27	0.41	0.41
Idaho	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	621	25	$17	80%	90%	$0.00	5	5
Idaho	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	373	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	716	15	$2,067	100%	N/A	$0.33	0.00	0.00
Idaho	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	4,814	15	$-44427.158	35%	N/A	$-1.43	12	17
Idaho	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	305	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	584	15	$1,653	100%	N/A	$0.33	0.00	0.00
Idaho	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	3,928	15	$-33190.302	35%	N/A	$-1.33	5	5
Idaho	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	776	15	$4,871	25%	94%	$0.72	20	20
Idaho	School	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,328	15	$59,235	15%	68%	$0.16	26	26
Idaho	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	776	15	$6,819	65%	98%	$1.01	53	53
Idaho	School	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,164	10	$14,731	10%	60%	$1.81	7	7
Idaho	School	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	776	5	$4,156	95%	72%	$1.25	53	53
Idaho	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,940	15	$40,594	50%	94%	$2.40	85	85

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Idaho	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	776	15	$3,409	75%	75%	$0.03	35	35
Idaho	School	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	194	18	$4,676	45%	65%	$0.14	4	4
Idaho	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	349	12	$5,450	25%	75%	$0.11	5	5
Idaho	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	776	40	$97,388	2.0%	**%	$22.19	0.00	0.00
Idaho	School	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	388	12	$513	10%	39%	$0.00	1	1
Idaho	School	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	29	25	$10,262	45%	70%	$0.04	0.72	0.72
Idaho	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2	25	$4,936	25%	85%	$0.15	0.04	0.04
Idaho	School	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	232	20	$3,390	45%	61%	$0.08	4	4
Idaho	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	139	20	$594	45%	85%	$0.02	4	4
Idaho	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	84%	.	0.00	0.00
Idaho	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Idaho	School	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Idaho	School	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	72%	.	0.00	0.00
Idaho	School	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	970	7	$3,841	90%	85%	$0.04	56	56
Idaho	School	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	2,052	10	$4,529	35%	68%	$0.32	33	33
Idaho	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,194	25	$17	15%	90%	$0.00	10	10
Idaho	School	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,015	25	$749	15%	76%	$0.00	7	7
Idaho	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	591	15	$2,598	25%	94%	$0.50	5	5
Idaho	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	591	15	$6,819	65%	98%	$1.33	12	12
Idaho	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,478	15	$40,594	50%	94%	$3.16	22	22
Idaho	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	591	15	$3,409	75%	75%	$0.05	9	9
Idaho	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	266	12	$5,450	25%	75%	$0.19	1	1
Idaho	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	591	40	$97,388	2.0%	**%	$29.13	0.00	0.00
Idaho	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	2	25	$4,936	75%	85%	$0.24	0.02	0.02
Idaho	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	106	20	$594	45%	85%	$0.04	0.83	0.83
Idaho	School	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	591	15	$19,485	10%	75%	$0.26	1	1

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Idaho	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	909	25	$17	80%	90%	$0.00	14	14
Idaho	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	91	6	$1	100%	N/A	$0.00	25	25
Idaho	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	91	6	$1	100%	N/A	$0.00	8	8
Idaho	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	489	4	$551	100%	N/A	$0.32	7	7
Idaho	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	489	4	$551	100%	N/A	$0.32	17	17
Idaho	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.92	100%	N/A	$0.01	0.00	0.00
Idaho	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$0.46	100%	N/A	$0.00	0.00	0.05
Idaho	School	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	142	20	$17	8.8%	100%	$0.01	3	3
Idaho	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.92	100%	N/A	$0.01	0.00	0.00
Idaho	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	17	20	$0.46	100%	N/A	$0.00	0.00	0.04
Idaho	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	2,381	15	$8,449	100%	N/A	$0.41	0.00	0.00
Idaho	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	833	15	$4,871	25%	94%	$0.67	0.00	0.00
Idaho	School	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	11,972	15	$59,235	15%	68%	$0.57	0.00	0.00
Idaho	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	833	15	$6,819	65%	98%	$0.94	0.00	0.00
Idaho	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,990	15	$3,409	75%	75%	$0.10	0.00	0.00
Idaho	School	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	997	18	$4,676	45%	65%	$0.49	0.00	0.00
Idaho	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,735	14	$17,673	5.0%	94%	$0.45	0.00	0.00
Idaho	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,795	12	$5,450	25%	75%	$0.40	0.00	0.00
Idaho	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	833	40	$97,388	2.0%	**%	$20.65	0.00	0.00
Idaho	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	8,827	30	$23,387	5.0%	N/A	$5.37	0.00	0.00
Idaho	School	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,993	12	$513	10%	39%	$0.02	0.00	0.00
Idaho	School	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,168	25	$10,262	45%	70%	$0.16	0.00	0.00
Idaho	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	785	25	$4,936	25%	85%	$0.61	0.00	0.00
Idaho	School	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	1,197	20	$3,390	45%	61%	$0.28	0.00	0.00
Idaho	School	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	718	20	$594	45%	85%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,913	25	$18,316	15%	84%	$0.20	0.00	0.00
Idaho	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	1,733	25	$5,650	15%	90%	$0.32	0.00	0.00
Idaho	School	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Idaho	School	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	72%	.	0.00	0.00
Idaho	School	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,988	7	$3,841	90%	85%	$0.14	0.00	0.00
Idaho	School	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	2,052	10	$4,529	35%	68%	$0.32	0.00	0.00
Idaho	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	6,139	25	$17	15%	90%	$0.00	0.00	0.00
Idaho	School	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,222	25	$749	15%	76%	$0.01	0.00	0.00
Idaho	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	2,346	15	$6,759	100%	N/A	$0.33	0.00	0.00
Idaho	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	777	15	$2,598	25%	94%	$0.38	0.00	0.00
Idaho	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	777	15	$6,819	65%	98%	$1.01	0.00	0.00
Idaho	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,719	15	$3,409	75%	75%	$0.11	0.00	0.00
Idaho	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,413	14	$17,673	5.0%	94%	$0.48	0.00	0.00
Idaho	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,673	12	$5,450	25%	75%	$0.42	0.00	0.00
Idaho	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	777	40	$97,388	2.0%	**%	$22.16	0.00	0.00
Idaho	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	8,579	30	$69,180	5.0%	N/A	$2.81	0.00	0.00
Idaho	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	731	25	$4,936	75%	85%	$0.66	0.00	0.00
Idaho	School	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	669	20	$594	45%	85%	$0.09	0.00	0.00
Idaho	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	1,615	25	$5,650	35%	90%	$0.34	0.00	0.00
Idaho	School	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,719	15	$19,485	10%	75%	$0.60	0.00	0.00
Idaho	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	5,722	25	$17	80%	90%	$0.00	0.00	0.00
Idaho	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	1,825	8	$507	5.0%	95%	$0.05	28	28
Idaho	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,209	8	$949	75%	70%	$0.05	550	550
Idaho	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,665	15	$3,601	62%	90%	$0.16	486	486
Idaho	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	932	8	$3,564	90%	41%	$0.64	88	88

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Idaho	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	26	13	$39	75%	95%	$0.19	6	6
Idaho	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	17,751	17	$12,061	5.0%	95%	$0.07	275	275
Idaho	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	1,825	8	$507	5.0%	95%	$0.05	9	9
Idaho	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,209	8	$949	75%	70%	$0.05	182	182
Idaho	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,665	15	$3,601	62%	90%	$0.16	150	150
Idaho	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	932	8	$3,564	90%	41%	$0.64	29	29
Idaho	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	26	13	$39	75%	95%	$0.19	1	1
Idaho	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	17,751	17	$12,061	5.0%	95%	$0.07	76	76
Idaho	School	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,201	10	$1,622	10%	95%	$0.19	32	32
Idaho	School	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,994	8	$11,167	30%	81%	$0.37	351	351
Idaho	School	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,745	8	$8,375	30%	81%	$0.37	0.00	0.00
Idaho	School	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	301	6	$111	10%	80%	$0.05	6	6
Idaho	School	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	185	6	$93	10%	80%	$0.09	4	4
Idaho	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,819	13	$1,920	100%	N/A	$0.08	0.00	0.00
Idaho	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,847	13	$7,192	100%	N/A	$0.18	835	856
Idaho	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	9,303	13	$57,046	25%	N/A	$0.76	534	547
Idaho	School	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,786	8	$3,564	75%	41%	$0.16	330	330
Idaho	School	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,133	15	$848	100%	N/A	$0.11	0.00	0.00
Idaho	School	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,395	15	$3,430	95%	N/A	$0.25	147	149
Idaho	School	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,247	29	$24,626	50%	N/A	$1.77	4	5
Idaho	School	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	790	19	$50	25%	N/A	$-0.04	0.00	0.00

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Idaho	School	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	388	15	$15,621	100%	N/A	$4.37	0.00	0.00
Idaho	School	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	381	8	$3,564	75%	41%	$1.56	35	35
Idaho	School	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	172	11	$66	95%	50%	$0.05	26	26
Idaho	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	34	13	$29	95%	98%	$0.11	10	10
Idaho	School	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,200	10	$1,622	10%	95%	$0.19	10	10
Idaho	School	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,321	8	$11,167	30%	81%	$0.43	105	105
Idaho	School	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,240	8	$8,375	30%	81%	$0.43	0.00	0.00
Idaho	School	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	233	6	$57	10%	80%	$0.01	1	1
Idaho	School	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	105	6	$41	10%	80%	$0.06	0.86	0.86
Idaho	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	34	13	$29	95%	98%	$0.11	3	3
Idaho	School	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	4,803	13	$14,668	100%	N/A	$0.38	477	478
Idaho	School	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,782	8	$3,564	75%	41%	$0.16	114	114
Idaho	School	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,114	4	$71	85%	N/A	$-0.00	0.00	131
Idaho	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,600	1	$47	100%	N/A	$0.00	0.00	0.00
Idaho	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	991	1	$36	100%	N/A	$-0.01	0.00	0.00
Idaho	School	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,148	12	$889	15%	N/A	$0.02	9	96
Idaho	School	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	199	8	$3,564	75%	41%	$2.98	6	6
Idaho	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.56	10%	90%	$0.05	0.06	0.06
Idaho	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	141	4	$0.00	75%	45%	$0.00	15	15
Idaho	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	4	4

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Idaho	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	621	10	$439	95%	86%	$0.10	165	165
Idaho	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	7	4	$2	5.0%	86%	$0.11	0.09	0.09
Idaho	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	649	4	$129	60%	90%	$0.06	114	114
Idaho	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.56	10%	90%	$0.05	0.02	0.02
Idaho	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	141	4	$0.00	75%	45%	$0.00	5	5
Idaho	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	1	1
Idaho	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	621	10	$439	95%	86%	$0.10	53	53
Idaho	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	7	4	$2	5.0%	86%	$0.11	0.03	0.03
Idaho	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	649	4	$129	60%	90%	$0.06	39	39
Idaho	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	286	6	$312	100%	N/A	$0.22	2	2
Idaho	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	286	6	$312	100%	N/A	$0.22	1	1
Idaho	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	413	6	$48	100%	N/A	$0.02	12	12
Idaho	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	413	6	$48	100%	N/A	$0.02	0.00	0.00
Idaho	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	353	8	$30	15%	45%	$0.01	2	2
Idaho	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	586	15	$142	5.0%	77%	$0.03	2	2
Idaho	School	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	405	15	$43	5.0%	95%	$0.01	2	2
Idaho	School	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	30	15	$19	5.0%	95%	$0.08	0.16	0.16
Idaho	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	396	10	$329	25%	80%	$0.12	9	9
Idaho	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	538	10	$446	25%	80%	$0.12	12	12
Idaho	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	105	10	$3,300	5.0%	68%	$4.49	0.39	0.39
Idaho	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	58	8	$5	1.0%	95%	$0.02	0.06	0.06
Idaho	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	8	12	$8	95%	77%	$0.12	0.73	0.73
Idaho	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	491	3	$77	10%	85%	$0.06	4	4
Idaho	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	6	12	$-1.6370899	95%	81%	$-0.03	0.61	0.61
Idaho	School	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	222	13	$31	25%	90%	$0.02	5	5
Idaho	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	12	4	$9	95%	20%	$0.20	0.26	0.26
Idaho	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	11	10	$2	2.5%	85%	$0.03	0.02	0.02

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	59	15	$65	10%	95%	$0.13	0.64	0.64
Idaho	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	7	15	$6	10%	95%	$0.10	0.07	0.07
Idaho	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	353	8	$30	15%	45%	$0.01	0.90	0.90
Idaho	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	586	15	$142	5.0%	77%	$0.03	0.77	0.77
Idaho	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	396	10	$329	25%	80%	$0.12	2	2
Idaho	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	538	10	$446	25%	80%	$0.12	3	3
Idaho	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	105	10	$3,300	5.0%	68%	$4.49	0.12	0.12
Idaho	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	58	8	$5	1.0%	95%	$0.02	0.02	0.02
Idaho	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	8	12	$8	95%	77%	$0.12	0.23	0.23
Idaho	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	245	3	$29	5.0%	90%	$0.04	0.42	0.42
Idaho	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	6	12	$-1.6370899	95%	81%	$-0.03	0.19	0.19
Idaho	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	12	4	$9	95%	20%	$0.20	0.09	0.09
Idaho	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	11	10	$2	2.5%	85%	$0.03	0.00	0.00
Idaho	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	59	15	$65	10%	95%	$0.13	0.19	0.19
Idaho	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	7	15	$6	10%	95%	$0.10	0.02	0.02
Idaho	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	216	20	$588	100%	N/A	$0.27	0.00	0.00
Idaho	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	242	20	$789	100%	N/A	$0.33	16	19
Idaho	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	190	20	$46	100%	N/A	$0.02	0.00	0.00
Idaho	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$21	100%	N/A	$0.03	0.00	0.00
Idaho	School	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,483	20	$156	8.8%	100%	$0.01	31	31
Idaho	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	216	20	$588	100%	N/A	$0.27	0.00	0.00
Idaho	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	242	20	$789	100%	N/A	$0.33	15	15
Idaho	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	190	20	$46	100%	N/A	$0.02	0.00	0.00
Idaho	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$21	100%	N/A	$0.03	0.00	0.00
Idaho	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	130	9	$17	100%	N/A	$0.02	33	34
Idaho	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	450	4	$1,687	10%	50%	$1.05	5	5
Idaho	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	130	9	$17	100%	N/A	$0.02	12	12
Idaho	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	448	4	$1,687	10%	50%	$1.05	1	1

Table C-2.2. Commercial Measure Details

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Idaho	School	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	99,434	15	$59,235	15%	68%	$0.07	426	426
Idaho	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	33,144	15	$3,409	75%	75%	$0.01	765	765
Idaho	School	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	8,286	18	$4,676	45%	65%	$0.06	94	94
Idaho	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	49,717	14	$17,673	5.0%	94%	$0.04	89	89
Idaho	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	14,915	12	$5,450	25%	75%	$0.05	106	106
Idaho	School	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	33,144	12	$513	10%	39%	$0.00	48	48
Idaho	School	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	65,209	25	$10,262	45%	70%	$0.02	776	776
Idaho	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	8,262	25	$4,936	25%	85%	$0.06	62	62
Idaho	School	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	9,943	20	$3,390	45%	61%	$0.03	95	95
Idaho	School	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	5,966	20	$594	45%	85%	$0.01	79	79
Idaho	School	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	79,701	25	$18,316	15%	84%	$0.02	347	347
Idaho	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	14,835	25	$5,650	15%	90%	$0.04	67	67
Idaho	School	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Idaho	School	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	72%	.	0.00	0.00
Idaho	School	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	41,431	7	$3,841	90%	85%	$0.02	1,063	1,063
Idaho	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	50,992	25	$17	15%	90%	$0.00	208	208
Idaho	School	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	43,377	25	$749	15%	76%	$0.00	146	146
Idaho	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	19,816	15	$3,409	75%	75%	$0.02	145	145
Idaho	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	29,725	14	$17,673	5.0%	94%	$0.07	17	17
Idaho	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	8,917	12	$5,450	25%	75%	$0.08	21	21
Idaho	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	4,939	25	$4,936	75%	85%	$0.10	28	28
Idaho	School	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	3,567	20	$594	45%	85%	$0.02	12	12
Idaho	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	8,869	25	$5,650	35%	90%	$0.06	25	25
Idaho	School	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	19,816	15	$19,485	10%	75%	$0.11	17	17
Idaho	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	30,487	25	$17	80%	90%	$0.00	215	215
Idaho	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	657	10	$90	100%	N/A	$0.02	93	93
Idaho	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	657	10	$90	100%	N/A	$0.02	36	36

Table C-2.2. Commercial Measure Details

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Idaho	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	8,144	10	$2,389	5.0%	90%	$0.04	119	119
Idaho	School	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	12,217	15	$59,235	15%	68%	$0.56	401	401
Idaho	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,700	95%	85%	$0.25	295	295
Idaho	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	415	15	$128	95%	76%	$0.04	91	91
Idaho	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	10,384	20	$2,169	55%	45%	$0.02	783	783
Idaho	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	2,138	15	$7,115	11%	77%	$0.38	51	51
Idaho	School	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	344	7	$97	65%	25%	$0.05	0.00	0.00
Idaho	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	651	18	$1,705	65%	59%	$0.27	82	82
Idaho	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	6,703	10	$2,389	5.0%	90%	$0.05	31	31
Idaho	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,700	95%	85%	$0.25	85	85
Idaho	School	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	14,614	50	$48,713	15%	98%	$0.28	152	152
Idaho	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	341	15	$128	95%	76%	$0.04	22	22
Idaho	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	8,546	20	$2,169	55%	45%	$0.03	146	146
Idaho	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	1,759	15	$7,115	11%	77%	$0.46	12	12
Idaho	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	536	18	$1,705	63%	59%	$0.33	18	18
Idaho	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	18,357	15	$1,128	75%	N/A	$0.01	0.36	14
Idaho	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	18,157	15	$674	75%	N/A	$0.01	0.00	0.00
Idaho	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	18,357	15	$1,128	75%	N/A	$0.01	0.26	3
Idaho	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	18,157	15	$674	75%	N/A	$0.01	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$-0.22	0.28	0.35

Table C-2.2. Commercial Measure Details

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Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$-0.08	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$-0.36	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$-0.02	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$-0.04	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$-0.15	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$-0.00	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$-0.18	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$-0.06	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,539	10	$5,413	55%	94%	$0.50	4	4
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	20%	35%	$0.36	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	20%	35%	$0.08	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	20%	55%	$0.40	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	20%	55%	$0.37	0.01	0.01
Idaho	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	452	12	$257	70%	95%	$0.07	1	1
Idaho	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$257	70%	94%	$0.07	1	1

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Idaho	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,159	25	$2,800	2.5%	100%	$0.04	0.84	0.84
Idaho	School	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	307	12	$89	80%	8%	$0.04	0.10	0.10
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	489	9	$28	95%	25%	$-0.02	0.66	0.66
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.06	2	2
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.03	0.89	0.89
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.00	0.60	0.60
Idaho	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	769	10	$392	75%	75%	$0.05	2	2
Idaho	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,511	10	$329	25%	94%	$0.01	4	4
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$-0.22	0.07	0.07
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$-0.08	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$-0.36	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$-0.02	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$-0.04	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$-0.15	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$-0.00	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$-0.18	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$-0.06	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,525	10	$5,413	55%	94%	$0.51	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	20%	35%	$0.36	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	20%	35%	$0.08	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	20%	55%	$0.40	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	20%	55%	$0.37	0.00	0.00
Idaho	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	452	12	$257	70%	95%	$0.07	0.42	0.42
Idaho	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$257	70%	94%	$0.07	0.38	0.38
Idaho	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,103	25	$2,240	2.5%	100%	$0.04	0.08	0.08
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	485	9	$0.20	95%	25%	$-0.03	0.16	0.16
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.06	0.73	0.73
Idaho	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.03	0.22	0.22
Idaho	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	762	10	$392	75%	75%	$0.05	0.61	0.61
Idaho	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,479	10	$329	25%	94%	$0.01	1	1
Idaho	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	16,719	15	$5,794	75%	N/A	$0.05	776	828
Idaho	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,003	15	$253	100%	N/A	$0.03	0.00	0.00
Idaho	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	16,719	15	$5,794	75%	N/A	$0.05	353	357
Idaho	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,003	15	$253	100%	N/A	$0.03	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$-0.22	3	4
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$-0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$-0.36	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$-0.02	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$-0.04	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$-0.15	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$-0.00	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$-0.18	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$-0.06	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,574	10	$5,413	25%	94%	$0.49	27	27
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	75%	35%	$0.36	0.00	0.02
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	75%	35%	$0.08	0.06	0.08
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	75%	55%	$0.40	0.00	0.06
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	75%	55%	$0.37	0.51	0.60
Idaho	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	452	12	$257	75%	95%	$0.07	22	25
Idaho	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$257	75%	95%	$0.07	20	23
Idaho	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,298	25	$2,800	2.5%	100%	$0.04	11	11
Idaho	School	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	314	12	$89	80%	8%	$0.04	1	1

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Idaho	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	501	9	$28	95%	25%	$-0.02	8	8
Idaho	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.06	35	35
Idaho	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.03	11	11
Idaho	School	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.00	7	7
Idaho	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	787	10	$392	75%	75%	$0.04	33	33
Idaho	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,590	10	$329	25%	94%	$0.01	58	58
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$-0.22	1	1
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$-0.08	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$-0.36	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$-0.02	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$-0.04	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$-0.15	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$-0.00	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$-0.18	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$-0.06	0.00	0.00
Idaho	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,530	10	$5,413	25%	94%	$0.51	7	7
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	75%	35%	$0.36	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	75%	35%	$0.08	0.02	0.02
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	75%	55%	$0.40	0.00	0.01
Idaho	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	75%	55%	$0.37	0.15	0.15
Idaho	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	452	12	$257	75%	95%	$0.07	6	6
Idaho	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$257	75%	95%	$0.07	6	6
Idaho	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,122	25	$2,240	2.5%	100%	$0.04	1	1
Idaho	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	487	9	$0.20	95%	25%	$-0.03	2	2
Idaho	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.06	10	10
Idaho	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.03	3	3
Idaho	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	765	10	$392	75%	75%	$0.05	8	8
Idaho	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,489	10	$329	25%	94%	$0.01	15	15
Idaho	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	306	4	$34	100%	N/A	$0.03	87	101
Idaho	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	472	4	$34	95%	30%	$0.02	237	237
Idaho	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	306	4	$34	100%	N/A	$0.03	15	15
Idaho	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	472	4	$34	95%	30%	$0.02	85	85
Idaho	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	72	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	186	15	$125	100%	N/A	$0.08	0.00	0.00
Idaho	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,544	15	$-2631.5223	26%	N/A	$-0.26	41	52
Idaho	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	49	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	127	15	$100	100%	N/A	$0.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	1,052	15	$-1918.4956	26%	N/A	$-0.28	14	14
Idaho	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	268	15	$525	35%	98%	$0.22	117	117
Idaho	Small Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	402	10	$785	10%	20%	$0.28	9	9
Idaho	Small Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	268	5	$221	95%	72%	$0.19	225	225
Idaho	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	671	15	$3,125	50%	94%	$0.53	360	360
Idaho	Small Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	67	18	$360	45%	65%	$0.23	19	19
Idaho	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	268	40	$15,195	2.0%	**%	$4.94	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	134	12	$48	40%	39%	$0.01	20	20
Idaho	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	4	25	$790	45%	65%	$0.17	1	1
Idaho	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	0.93	25	$380	25%	85%	$0.39	0.19	0.19
Idaho	Small Office	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	80	20	$260	45%	61%	$0.13	21	21
Idaho	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	48	20	$45	45%	85%	$0.04	18	18
Idaho	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$1,410	15%	84%	.	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$435	15%	90%	.	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$362	10%	85%	.	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,466	10%	67%	.	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	335	7	$295	90%	85%	$0.07	251	251
Idaho	Small Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	211	10	$429	35%	68%	$0.29	44	44
Idaho	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	413	25	$1	15%	90%	$0.00	48	48
Idaho	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	351	25	$71	15%	71%	$0.01	31	31
Idaho	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	168	15	$525	35%	98%	$0.36	23	23
Idaho	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	422	15	$3,125	50%	94%	$0.85	76	76
Idaho	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	168	40	$15,195	2.0%	**%	$7.85	0.00	0.00
Idaho	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	0.58	25	$380	75%	85%	$0.85	0.09	0.09
Idaho	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	30	20	$45	45%	85%	$0.07	3	3
Idaho	Small Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	168	15	$1,500	10%	75%	$0.51	4	4
Idaho	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	259	25	$1	80%	90%	$0.00	54	54

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	8	6	$0.18	100%	N/A	$0.00	15	15
Idaho	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	8	6	$0.18	100%	N/A	$0.00	5	5
Idaho	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	41	4	$46	100%	N/A	$0.32	4	4
Idaho	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	41	4	$46	100%	N/A	$0.32	9	9
Idaho	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	0.89	20	$0.12	100%	N/A	$0.01	0.00	0.00
Idaho	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.06	100%	N/A	$0.00	0.00	0.04
Idaho	Small Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	19	20	$2	8.8%	100%	$0.01	3	3
Idaho	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	0.89	20	$0.12	100%	N/A	$0.01	0.00	0.00
Idaho	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.06	100%	N/A	$0.00	0.00	0.04
Idaho	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	329	15	$467	100%	N/A	$0.16	0.00	0.00
Idaho	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,153	15	$935	100%	N/A	$0.09	0.00	0.00
Idaho	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	332	15	$525	35%	98%	$0.18	0.00	0.00
Idaho	Small Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	253	18	$360	45%	65%	$0.15	0.00	0.00
Idaho	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,024	14	$2,580	5.0%	94%	$0.30	0.00	0.00
Idaho	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	332	40	$15,195	2.0%	**%	$3.99	0.00	0.00
Idaho	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,141	30	$27,732	5.0%	N/A	$1.17	0.00	0.00
Idaho	Small Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	761	12	$48	40%	39%	$0.01	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	795	25	$790	45%	65%	$0.10	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	170	25	$380	25%	85%	$0.22	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	304	20	$260	45%	61%	$0.09	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	182	20	$45	45%	85%	$0.03	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,866	25	$1,410	15%	84%	$0.07	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	363	25	$435	15%	90%	$0.12	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$362	10%	85%	.	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,466	10%	67%	.	0.00	0.00
Idaho	Small Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,269	7	$295	90%	85%	$0.04	0.00	0.00
Idaho	Small Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	211	10	$429	35%	68%	$0.29	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,562	25	$1	15%	90%	$0.00	0.00	0.00
Idaho	Small Office	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,329	25	$71	15%	71%	$0.01	0.00	0.00
Idaho	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	176	15	$374	100%	N/A	$0.24	0.00	0.00
Idaho	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	571	15	$748	100%	N/A	$0.15	0.00	0.00
Idaho	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	160	15	$525	35%	98%	$0.38	0.00	0.00
Idaho	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	494	14	$2,580	5.0%	94%	$0.62	0.00	0.00
Idaho	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	160	40	$15,195	2.0%	**%	$8.26	0.00	0.00
Idaho	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	1,169	30	$14,245	5.0%	N/A	$1.09	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	82	25	$380	75%	85%	$0.45	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	88	20	$45	45%	85%	$0.05	0.00	0.00
Idaho	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	175	25	$435	35%	90%	$0.24	0.00	0.00
Idaho	Small Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	490	15	$1,500	10%	75%	$0.35	0.00	0.00
Idaho	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	753	25	$1	80%	90%	$0.00	0.00	0.00
Idaho	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	140	8	$39	5.0%	95%	$0.05	14	14
Idaho	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	416	8	$263	75%	70%	$0.11	459	459
Idaho	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	345	15	$466	62%	90%	$0.16	405	405
Idaho	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	147	8	$274	90%	52%	$0.31	113	113
Idaho	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	2	13	$3	75%	95%	$0.19	3	3
Idaho	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	1,366	17	$928	5.0%	95%	$0.07	136	136
Idaho	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	140	8	$39	5.0%	95%	$0.05	4	4
Idaho	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	416	8	$263	75%	70%	$0.11	152	152
Idaho	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	345	15	$466	62%	90%	$0.16	125	125
Idaho	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	147	8	$274	90%	52%	$0.31	37	37
Idaho	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	2	13	$3	75%	95%	$0.19	1	1
Idaho	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	1,366	17	$928	5.0%	95%	$0.07	37	37

Table C-2.2. Commercial Measure Details

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Idaho	Small Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	100	10	$124	0.5%	95%	$0.18	0.83	0.83
Idaho	Small Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,359	8	$1,500	30%	78%	$0.18	556	556
Idaho	Small Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,019	8	$1,125	30%	78%	$0.18	0.00	0.00
Idaho	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	193	13	$92	100%	N/A	$0.00	0.00	0.00
Idaho	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	264	13	$448	100%	N/A	$0.21	280	296
Idaho	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	587	13	$3,685	25%	N/A	$0.83	207	218
Idaho	Small Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	387	8	$274	75%	52%	$0.12	246	246
Idaho	Small Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	35	15	$21	100%	N/A	$0.81	0.00	0.00
Idaho	Small Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	43	15	$89	95%	N/A	$-0.93	28	29
Idaho	Small Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	38	25	$648	50%	N/A	$-1.36	0.87	0.89
Idaho	Small Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	24	17	$0.42	25%	N/A	$-1.65	0.00	0.00
Idaho	Small Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	12	15	$411	100%	N/A	$-5.61	0.00	0.00
Idaho	Small Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	14	8	$274	75%	52%	$3.23	10	10
Idaho	Small Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	35	11	$13	95%	50%	$0.05	35	35
Idaho	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	7	13	$6	95%	98%	$0.11	13	13
Idaho	Small Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	90	10	$124	0.5%	95%	$0.20	0.26	0.26
Idaho	Small Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,068	8	$1,500	30%	78%	$0.23	160	160
Idaho	Small Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	801	8	$1,125	30%	78%	$0.23	0.00	0.00
Idaho	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	7	13	$6	95%	98%	$0.11	4	4

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Idaho	Small Office	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	361	13	$650	100%	N/A	$0.22	220	221
Idaho	Small Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	348	8	$274	75%	52%	$0.13	81	81
Idaho	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,324	4	$19	85%	N/A	$-0.03	0.00	36
Idaho	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,158	1	$13	100%	N/A	$0.02	0.00	0.00
Idaho	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	301	1	$10	100%	N/A	$-0.04	0.00	0.00
Idaho	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,335	12	$245	15%	N/A	$-0.00	17	108
Idaho	Small Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	53	8	$274	75%	52%	$0.86	20	20
Idaho	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.54	10%	90%	$0.05	0.38	0.38
Idaho	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	13	4	$0.00	75%	45%	$0.00	9	9
Idaho	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	132	10	$0.65	95%	75%	$0.00	199	199
Idaho	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$0.22	5.0%	86%	$0.01	0.61	0.61
Idaho	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	300	4	$60	60%	90%	$0.06	340	340
Idaho	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.54	10%	90%	$0.05	0.12	0.12
Idaho	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	13	4	$0.00	75%	45%	$0.00	3	3
Idaho	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	132	10	$0.65	95%	75%	$0.00	63	63
Idaho	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$0.22	5.0%	86%	$0.01	0.21	0.21
Idaho	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	300	4	$60	60%	90%	$0.06	117	117
Idaho	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	26	6	$29	100%	N/A	$0.22	1	1
Idaho	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	26	6	$29	100%	N/A	$0.22	0.84	0.84
Idaho	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	76	6	$8	100%	N/A	$0.02	14	14
Idaho	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	76	6	$8	100%	N/A	$0.02	0.00	0.00
Idaho	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	30	20	$81	100%	N/A	$0.27	0.00	0.00
Idaho	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	33	20	$109	100%	N/A	$0.33	14	17
Idaho	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	8	20	$2	100%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	205	20	$21	8.8%	100%	$0.01	28	28
Idaho	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	30	20	$81	100%	N/A	$0.27	0.00	0.00
Idaho	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	33	20	$109	100%	N/A	$0.33	13	14
Idaho	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$6	100%	N/A	$0.02	0.00	0.00
Idaho	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	8	20	$2	100%	N/A	$0.03	0.00	0.00
Idaho	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	26	9	$3	100%	N/A	$0.02	44	45
Idaho	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	92	4	$348	10%	50%	$1.05	7	7
Idaho	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	26	9	$3	100%	N/A	$0.02	16	16
Idaho	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	92	4	$348	10%	50%	$1.05	2	2
Idaho	Small Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	283	18	$360	45%	65%	$0.11	44	44
Idaho	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,703	14	$2,580	5.0%	94%	$0.18	42	42
Idaho	Small Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,135	12	$48	40%	39%	$0.01	93	93
Idaho	Small Office	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,321	25	$790	45%	65%	$0.06	202	202
Idaho	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	283	25	$380	25%	85%	$0.13	30	30
Idaho	Small Office	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	340	20	$260	45%	61%	$0.06	46	46
Idaho	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	204	20	$45	45%	85%	$0.02	38	38
Idaho	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,730	25	$1,410	15%	84%	$0.05	169	169
Idaho	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	508	25	$435	15%	90%	$0.08	32	32
Idaho	Small Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$362	10%	85%	.	0.00	0.00
Idaho	Small Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$3,466	10%	67%	.	0.00	0.00
Idaho	Small Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,419	7	$295	90%	85%	$0.03	517	517
Idaho	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	1,746	25	$1	15%	90%	$0.00	101	101
Idaho	Small Office	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,486	25	$71	15%	71%	$0.00	66	66
Idaho	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	774	14	$2,580	5.0%	94%	$0.40	6	6
Idaho	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	128	25	$380	75%	85%	$0.29	10	10
Idaho	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	92	20	$45	45%	85%	$0.04	4	4
Idaho	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	230	25	$435	35%	90%	$0.18	8	8
Idaho	Small Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	516	15	$1,500	10%	75%	$0.26	6	6
Idaho	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	793	25	$1	80%	90%	$0.00	76	76
Idaho	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	51	10	$7	100%	N/A	$0.02	47	47

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	51	10	$7	100%	N/A	$0.02	18	18
Idaho	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	34	15	$9	95%	76%	$0.03	52	52
Idaho	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	864	20	$167	55%	45%	$0.02	446	446
Idaho	Small Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	26	7	$7	65%	25%	$0.05	0.00	0.00
Idaho	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	29	15	$9	95%	76%	$0.04	13	13
Idaho	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	745	20	$167	55%	45%	$0.02	90	90
Idaho	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	429	15	$241	75%	N/A	$0.09	0.06	2
Idaho	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	424	15	$144	75%	N/A	$0.06	0.00	0.00
Idaho	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	456	15	$241	75%	N/A	$0.08	0.04	0.70
Idaho	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	451	15	$144	75%	N/A	$0.06	0.00	0.00
Idaho	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	36	10	$416	55%	80%	$1.66	0.63	0.63
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	90%	35%	$0.33	0.00	0.00
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	90%	35%	$0.08	0.01	0.01
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	90%	55%	$0.38	0.00	0.01
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	90%	55%	$0.37	0.07	0.09
Idaho	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	144	25	$800	2.5%	100%	$0.54	0.14	0.14
Idaho	Small Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	30%	$0.46	0.06	0.06
Idaho	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	11	9	$4	95%	25%	$0.03	0.10	0.10
Idaho	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	18	10	$58	75%	85%	$0.44	0.46	0.46

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	37	10	$416	55%	80%	$1.57	0.16	0.16
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	90%	35%	$0.33	0.00	0.00
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	90%	35%	$0.08	0.00	0.00
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	90%	55%	$0.38	0.00	0.00
Idaho	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	90%	55%	$0.37	0.02	0.02
Idaho	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	151	25	$640	2.5%	100%	$0.41	0.01	0.01
Idaho	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	12	9	$0.03	95%	25%	$-0.02	0.02	0.02
Idaho	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	18	10	$58	75%	85%	$0.41	0.12	0.12
Idaho	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	390	15	$1,241	75%	N/A	$0.41	133	138
Idaho	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	23	15	$54	100%	N/A	$0.27	0.00	0.00
Idaho	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	415	15	$1,241	75%	N/A	$0.39	65	66
Idaho	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	24	15	$54	100%	N/A	$0.25	0.00	0.00
Idaho	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	36	10	$416	25%	94%	$1.62	4	4
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	75%	35%	$0.33	0.00	0.04
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	75%	35%	$0.08	0.11	0.12
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	75%	55%	$0.38	0.00	0.11
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.37	0.83	0.96
Idaho	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	147	25	$800	2.5%	100%	$0.53	1	1
Idaho	Small Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	30%	$0.45	0.91	0.91

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	11	9	$4	95%	25%	$0.03	1	1
Idaho	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	18	10	$58	75%	85%	$0.43	6	6
Idaho	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	38	10	$416	25%	94%	$1.57	1	1
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	75%	35%	$0.33	0.00	0.00
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	75%	35%	$0.08	0.03	0.03
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	75%	55%	$0.38	0.00	0.02
Idaho	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.37	0.25	0.25
Idaho	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	152	25	$640	2.5%	100%	$0.41	0.22	0.22
Idaho	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	12	9	$0.03	95%	25%	$-0.02	0.43	0.43
Idaho	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	19	10	$58	75%	85%	$0.41	1	1
Idaho	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	110	4	$12	100%	N/A	$0.03	2	2
Idaho	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	110	4	$12	100%	N/A	$0.03	0.48	0.48
Idaho	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	169	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	431	15	$408	100%	N/A	$0.11	0.00	0.00
Idaho	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	3,576	15	$-8552.4474	35%	N/A	$-0.36	6	8
Idaho	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	124	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	318	15	$326	100%	N/A	$0.12	0.00	0.00
Idaho	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,635	15	$-6235.1107	35%	N/A	$-0.36	2	2
Idaho	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	591	15	$1,050	80%	98%	$0.20	32	32
Idaho	Small Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	887	10	$2,551	10%	80%	$0.41	4	4
Idaho	Small Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	591	5	$720	95%	72%	$0.28	25	25

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,479	15	$6,250	50%	94%	$0.49	40	40
Idaho	Small Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	147	18	$720	45%	65%	$0.42	2	2
Idaho	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	591	40	$30,390	2.0%	**%	$4.48	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	295	12	$83	10%	39%	$0.03	0.58	0.58
Idaho	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	22	25	$1,580	45%	68%	$0.56	0.36	0.36
Idaho	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	2	25	$760	25%	85%	$2.19	0.02	0.02
Idaho	Small Retail	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	177	20	$521	45%	61%	$0.24	2	2
Idaho	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	106	20	$91	45%	85%	$0.07	2	2
Idaho	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,820	15%	84%	.	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$870	15%	90%	.	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	68%	.	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	739	7	$591	90%	85%	$0.12	28	28
Idaho	Small Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	415	10	$740	35%	68%	$0.25	4	4
Idaho	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	910	25	$2	15%	90%	$0.00	5	5
Idaho	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	774	25	$122	15%	76%	$0.01	3	3
Idaho	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	403	15	$1,050	80%	98%	$0.30	6	6
Idaho	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,009	15	$6,250	50%	94%	$0.71	9	9
Idaho	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	403	40	$30,390	2.0%	**%	$6.57	0.00	0.00
Idaho	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$760	75%	85%	$4.21	0.01	0.01
Idaho	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	72	20	$91	45%	85%	$0.11	0.37	0.37
Idaho	Small Retail	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	403	15	$3,000	10%	75%	$0.74	0.52	0.52
Idaho	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	621	25	$2	80%	90%	$0.00	6	6
Idaho	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	21	6	$0.46	100%	N/A	$0.00	2	2
Idaho	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	21	6	$0.46	100%	N/A	$0.00	0.94	0.94
Idaho	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	14	4	$16	100%	N/A	$0.32	0.10	0.10
Idaho	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	14	4	$16	100%	N/A	$0.32	0.25	0.25
Idaho	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.20	100%	N/A	$0.01	0.00	0.00
Idaho	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.10	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	31	20	$3	8.8%	100%	$0.01	0.34	0.34
Idaho	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.20	100%	N/A	$0.01	0.00	0.00
Idaho	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.10	100%	N/A	$0.00	0.00	0.00
Idaho	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	593	15	$1,520	100%	N/A	$0.29	0.00	0.00
Idaho	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,901	15	$3,040	100%	N/A	$0.18	0.00	0.00
Idaho	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	765	15	$1,050	80%	98%	$0.16	0.00	0.00
Idaho	Small Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	459	18	$720	45%	65%	$0.16	0.00	0.00
Idaho	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,607	14	$5,160	5.0%	94%	$0.38	0.00	0.00
Idaho	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	765	40	$30,390	2.0%	**%	$3.47	0.00	0.00
Idaho	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,950	30	$90,131	5.0%	N/A	$2.07	0.00	0.00
Idaho	Small Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,377	12	$83	10%	39%	$0.01	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,112	25	$1,580	45%	68%	$0.07	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	268	25	$760	25%	85%	$0.28	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	550	20	$521	45%	61%	$0.09	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	330	20	$91	45%	85%	$0.03	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,829	25	$2,820	15%	84%	$0.10	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	551	25	$870	15%	90%	$0.15	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	68%	.	0.00	0.00
Idaho	Small Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,295	7	$591	90%	85%	$0.05	0.00	0.00
Idaho	Small Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	415	10	$740	35%	68%	$0.25	0.00	0.00
Idaho	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,825	25	$2	15%	90%	$0.00	0.00	0.00
Idaho	Small Retail	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,403	25	$122	15%	76%	$0.00	0.00	0.00
Idaho	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	370	15	$1,216	100%	N/A	$0.38	0.00	0.00
Idaho	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,113	15	$2,432	100%	N/A	$0.25	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	426	15	$1,050	80%	98%	$0.28	0.00	0.00
Idaho	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	894	14	$5,160	5.0%	94%	$0.69	0.00	0.00
Idaho	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	426	40	$30,390	2.0%	**%	$6.22	0.00	0.00
Idaho	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,509	30	$46,298	5.0%	N/A	$1.65	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	149	25	$760	75%	85%	$0.50	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	184	20	$91	45%	85%	$0.05	0.00	0.00
Idaho	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	307	25	$870	35%	90%	$0.28	0.00	0.00
Idaho	Small Retail	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,022	15	$3,000	10%	75%	$0.34	0.00	0.00
Idaho	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,573	25	$2	80%	90%	$0.00	0.00	0.00
Idaho	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	2	2
Idaho	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	721	8	$372	75%	70%	$0.09	57	57
Idaho	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	599	15	$809	62%	90%	$0.16	50	50
Idaho	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$548	45%	56%	$0.30	9	9
Idaho	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	40	13	$60	75%	95%	$0.19	4	4
Idaho	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	19	19
Idaho	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.67	0.67
Idaho	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	721	8	$372	75%	70%	$0.09	19	19
Idaho	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	599	15	$809	62%	90%	$0.16	15	15
Idaho	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$548	45%	56%	$0.30	3	3
Idaho	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	40	13	$60	75%	95%	$0.19	1	1
Idaho	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	5	5
Idaho	Small Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	349	10	$249	0.5%	95%	$0.10	0.20	0.20
Idaho	Small Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,700	8	$3,000	30%	84%	$0.14	115	115
Idaho	Small Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,775	8	$2,250	30%	84%	$0.14	0.00	0.00
Idaho	Small Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	423	6	$157	2.5%	80%	$0.05	1	1

Table C-2.2. Commercial Measure Details

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Idaho	Small Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	317	6	$161	2.5%	80%	$0.09	0.78	0.78
Idaho	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,327	13	$1,272	100%	N/A	$0.12	102	106
Idaho	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	930	13	$452	100%	N/A	$0.04	0.00	0.00
Idaho	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,214	13	$11,306	25%	N/A	$0.65	54	56
Idaho	Small Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,589	8	$548	5.0%	56%	$0.06	5	5
Idaho	Small Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	538	15	$207	100%	N/A	$0.12	0.00	0.00
Idaho	Small Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	661	15	$874	95%	N/A	$0.04	32	32
Idaho	Small Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	591	16	$6,349	50%	N/A	$0.91	1	1
Idaho	Small Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	376	11	$1	25%	N/A	$-0.16	0.00	0.00
Idaho	Small Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	187	15	$4,023	100%	N/A	$1.56	0.00	0.00
Idaho	Small Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	250	8	$548	5.0%	56%	$0.36	1	1
Idaho	Small Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	395	11	$154	95%	50%	$0.05	28	28
Idaho	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	79	13	$67	95%	98%	$0.11	11	11
Idaho	Small Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	420	10	$249	0.5%	95%	$0.08	0.08	0.08
Idaho	Small Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,102	8	$3,000	30%	84%	$0.16	36	36
Idaho	Small Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,327	8	$2,250	30%	84%	$0.16	0.00	0.00
Idaho	Small Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	327	6	$80	2.5%	80%	$0.01	0.31	0.31
Idaho	Small Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	180	6	$70	2.5%	80%	$0.06	0.17	0.17
Idaho	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	79	13	$67	95%	98%	$0.11	3	3

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Idaho	Small Retail	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,682	13	$7,666	100%	N/A	$0.57	77	77
Idaho	Small Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,913	8	$548	5.0%	56%	$0.05	2	2
Idaho	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,620	4	$112	95%	N/A	$-0.00	0.00	0.00
Idaho	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	10,160	1	$74	100%	N/A	$0.00	0.00	0.00
Idaho	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,552	1	$59	100%	N/A	$-0.01	0.00	0.00
Idaho	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,718	12	$1,394	15%	N/A	$0.01	4	8
Idaho	Small Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	286	8	$548	5.0%	56%	$0.32	1	1
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.60	10%	90%	$0.05	0.03	0.03
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	32	4	$0.00	10%	45%	$0.00	0.22	0.22
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	3	3
Idaho	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	7	4	$0.45	5.0%	86%	$0.02	0.05	0.05
Idaho	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	4	4
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.60	10%	90%	$0.05	0.01	0.01
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	32	4	$0.00	10%	45%	$0.00	0.07	0.07
Idaho	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	1	1
Idaho	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	7	4	$0.45	5.0%	86%	$0.02	0.01	0.01
Idaho	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	1	1
Idaho	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	66	6	$72	100%	N/A	$0.22	0.29	0.29
Idaho	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	66	6	$72	100%	N/A	$0.22	0.15	0.15
Idaho	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	42	6	$4	100%	N/A	$0.02	0.57	0.57
Idaho	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	42	6	$4	100%	N/A	$0.02	0.00	0.00
Idaho	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$128	100%	N/A	$0.27	0.00	0.00
Idaho	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$172	100%	N/A	$0.33	1	2
Idaho	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	41	20	$10	100%	N/A	$0.02	0.00	0.00
Idaho	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	13	20	$4	100%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	324	20	$34	8.8%	100%	$0.01	3	3
Idaho	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$128	100%	N/A	$0.27	0.00	0.00
Idaho	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$172	100%	N/A	$0.33	1	1
Idaho	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	41	20	$10	100%	N/A	$0.02	0.00	0.00
Idaho	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	13	20	$4	100%	N/A	$0.03	0.00	0.00
Idaho	Small Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	414	18	$720	45%	65%	$0.17	3	3
Idaho	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,488	14	$5,160	5.0%	94%	$0.25	3	3
Idaho	Small Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,659	12	$83	10%	39%	$0.01	1	1
Idaho	Small Retail	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,263	25	$1,580	45%	68%	$0.05	30	30
Idaho	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	413	25	$760	25%	85%	$0.18	2	2
Idaho	Small Retail	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	497	20	$521	45%	61%	$0.10	3	3
Idaho	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	298	20	$91	45%	85%	$0.03	3	3
Idaho	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,989	25	$2,820	15%	84%	$0.07	14	14
Idaho	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	742	25	$870	15%	90%	$0.11	2	2
Idaho	Small Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Idaho	Small Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	68%	.	0.00	0.00
Idaho	Small Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,073	7	$591	90%	85%	$0.05	42	42
Idaho	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	2,552	25	$2	15%	90%	$0.00	8	8
Idaho	Small Retail	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,171	25	$122	15%	76%	$0.01	5	5
Idaho	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,269	14	$5,160	5.0%	94%	$0.48	0.57	0.57
Idaho	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	210	25	$760	75%	85%	$0.35	0.96	0.96
Idaho	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	152	20	$91	45%	85%	$0.06	0.41	0.41
Idaho	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	378	25	$870	35%	90%	$0.22	0.83	0.83
Idaho	Small Retail	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	846	15	$3,000	10%	75%	$0.38	0.56	0.56
Idaho	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	1,301	25	$2	80%	90%	$0.00	7	7
Idaho	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	224	10	$30	100%	N/A	$0.02	14	14
Idaho	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	224	10	$30	100%	N/A	$0.02	5	5
Idaho	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	84	15	$19	95%	76%	$0.03	9	9

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,103	20	$334	55%	45%	$0.02	78	78
Idaho	Small Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
Idaho	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	68	15	$19	95%	76%	$0.03	2	2
Idaho	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,713	20	$334	55%	45%	$0.02	15	15
Idaho	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	518	15	$241	75%	N/A	$0.07	0.00	0.13
Idaho	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	513	15	$144	75%	N/A	$0.05	0.00	0.00
Idaho	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	500	15	$241	75%	N/A	$0.08	0.00	0.03
Idaho	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	495	15	$144	75%	N/A	$0.05	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$-0.22	0.01	0.01
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$-0.10	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$-0.40	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$-0.03	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$-0.05	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$-0.17	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$-0.01	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$-0.20	0.00	0.00

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Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$-0.06	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	43	10	$833	75%	94%	$2.74	0.05	0.05
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.34	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.39	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.37	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	174	25	$800	2.5%	100%	$0.45	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	90%	$0.38	0.01	0.01
Idaho	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	13	9	$8	95%	25%	$0.07	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	21	10	$117	75%	95%	$0.75	0.02	0.02
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$-0.22	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$-0.10	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$-0.40	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$-0.03	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$-0.05	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$-0.17	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$-0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$-0.20	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$-0.06	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	41	10	$833	75%	94%	$2.86	0.01	0.01
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.34	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.39	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.37	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	166	25	$640	2.5%	100%	$0.38	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.06	95%	25%	$-0.02	0.00	0.00
Idaho	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	20	10	$117	75%	95%	$0.78	0.00	0.00
Idaho	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	472	15	$1,241	75%	N/A	$0.34	7	7
Idaho	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	28	15	$54	100%	N/A	$0.22	0.00	0.00
Idaho	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	456	15	$1,241	75%	N/A	$0.35	3	3
Idaho	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	27	15	$54	100%	N/A	$0.23	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$-0.22	0.17	0.20
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$-0.10	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$-0.40	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$-0.03	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$-0.05	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$-0.17	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$-0.01	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$-0.20	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$-0.06	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	44	10	$833	25%	94%	$2.68	0.25	0.25
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.34	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.01	0.01
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.39	0.00	0.01
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.37	0.11	0.13
Idaho	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	177	25	$800	2.5%	100%	$0.44	0.10	0.10
Idaho	Small Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	90%	$0.37	0.15	0.15
Idaho	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	14	9	$8	95%	25%	$0.07	0.08	0.08
Idaho	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	22	10	$117	75%	95%	$0.73	0.39	0.39
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$-0.22	0.05	0.05
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$-0.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$-0.40	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$-0.03	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$-0.05	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$-0.17	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$-0.01	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$-0.20	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$-0.06	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	41	10	$833	25%	94%	$2.85	0.06	0.06
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.34	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.39	0.00	0.00
Idaho	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.37	0.03	0.03
Idaho	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	167	25	$640	2.5%	100%	$0.37	0.01	0.01
Idaho	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.06	95%	25%	$-0.02	0.02	0.02
Idaho	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	20	10	$117	75%	95%	$0.78	0.10	0.10
Idaho	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	220	4	$25	100%	N/A	$0.03	17	17
Idaho	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	220	4	$25	100%	N/A	$0.03	3	3

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	54	5	$1,703	95%	81%	$7.26	0.63	0.63
Idaho	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	331	10	$5,898	25%	70%	$2.54	0.86	0.86
Idaho	Warehouse	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	219	15	$13,694	45%	90%	$7.17	1	1
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	920	20	$4,392	100%	N/A	$0.48	5	6
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	306	20	$1,464	100%	N/A	$0.48	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	684	20	$3,266	100%	N/A	$0.48	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	438	15	$3,500	80%	98%	$0.92	4	4
Idaho	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	351	7	$729	10%	94%	$0.38	0.43	0.43
Idaho	Warehouse	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	614	15	$65	65%	35%	$0.01	1	1
Idaho	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	175	13	$527	75%	65%	$0.37	1	1
Idaho	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	438	15	$1,750	75%	75%	$0.46	3	3
Idaho	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	438	40	$1,300	2.0%	**%	$20.14	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	219	12	$70	10%	39%	$0.04	0.09	0.09
Idaho	Warehouse	Cooling Chillers	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	16	25	$5,266	45%	62%	$31.45	0.05	0.05
Idaho	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$2,533	25%	85%	$162.30	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	81%	.	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	63%	.	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (ID State Code)	No Insulation	Per Building	Existing	65	15	$205	65%	45%	$0.36	0.22	0.22
Idaho	Warehouse	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	548	7	$1,971	90%	85%	$0.66	4	4
Idaho	Warehouse	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	177	10	$621	35%	68%	$0.50	0.44	0.44
Idaho	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	675	25	$2	15%	90%	$0.00	0.95	0.95
Idaho	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	574	25	$102	15%	71%	$0.02	0.62	0.62
Idaho	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	32	5	$1,703	95%	81%	$12.07	0.12	0.12

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	199	10	$5,308	25%	70%	$3.81	0.16	0.16
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	668	20	$3,953	100%	N/A	$0.59	2	2
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	222	20	$1,317	100%	N/A	$0.59	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	497	20	$2,939	100%	N/A	$0.59	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	263	15	$3,500	80%	98%	$1.52	0.90	0.90
Idaho	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	211	7	$656	10%	94%	$0.57	0.08	0.08
Idaho	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	105	13	$475	75%	65%	$0.56	0.21	0.21
Idaho	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	263	15	$1,750	75%	75%	$0.76	0.59	0.59
Idaho	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	263	40	$1,300	2.0%	**%	$33.49	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	0.91	25	$2,533	75%	85%	$269.84	0.00	0.00
Idaho	Warehouse	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	263	15	$10,000	10%	75%	$4.35	0.07	0.07
Idaho	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	406	25	$2	80%	90%	$0.00	0.93	0.93
Idaho	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	146	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	375	15	$680	100%	N/A	$0.21	0.00	0.00
Idaho	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	3,108	15	$-14254.079	35%	N/A	$-0.69	7	10
Idaho	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	106	15	$0.00	100%	N/A	$0.00	0.00	0.00
Idaho	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	272	15	$544	100%	N/A	$0.23	0.00	0.00
Idaho	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,259	15	$-10391.851	35%	N/A	$-0.71	2	2
Idaho	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	514	15	$3,500	80%	98%	$0.78	41	41
Idaho	Warehouse	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	771	10	$4,252	10%	40%	$0.79	2	2
Idaho	Warehouse	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	514	5	$1,200	95%	72%	$0.55	33	33
Idaho	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,285	15	$20,833	50%	94%	$1.86	52	52
Idaho	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	514	15	$1,750	75%	75%	$0.39	22	22

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	128	18	$2,400	45%	65%	$1.96	2	2
Idaho	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	514	40	$1,300	2.0%	**%	$17.18	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	257	12	$70	10%	39%	$0.04	0.72	0.72
Idaho	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	19	25	$5,266	45%	62%	$26.83	0.38	0.38
Idaho	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1	25	$2,533	25%	85%	$138.45	0.02	0.02
Idaho	Warehouse	Cooling Dx Evap	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	154	20	$1,739	45%	59%	$1.13	2	2
Idaho	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	92	20	$305	45%	85%	$0.33	2	2
Idaho	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	81%	.	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	63%	.	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	642	7	$1,971	90%	85%	$0.56	35	35
Idaho	Warehouse	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	177	10	$621	35%	68%	$0.50	2	2
Idaho	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	791	25	$2	15%	90%	$0.00	6	6
Idaho	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	673	25	$102	15%	71%	$0.01	4	4
Idaho	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	346	15	$3,500	80%	98%	$1.16	8	8
Idaho	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	865	15	$20,833	50%	94%	$2.77	11	11
Idaho	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	346	15	$1,750	75%	75%	$0.58	5	5
Idaho	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	346	40	$1,300	2.0%	**%	$25.53	0.00	0.00
Idaho	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	1	25	$2,533	75%	85%	$205.74	0.01	0.01
Idaho	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	62	20	$305	45%	85%	$0.49	0.44	0.44
Idaho	Warehouse	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	346	15	$10,000	10%	75%	$3.32	0.63	0.63
Idaho	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	532	25	$2	80%	90%	$0.00	7	7
Idaho	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	33	6	$0.73	100%	N/A	$0.00	13	13
Idaho	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	33	6	$0.73	100%	N/A	$0.00	4	4
Idaho	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	29	4	$33	100%	N/A	$0.32	0.68	0.68
Idaho	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	29	4	$33	100%	N/A	$0.32	1	1
Idaho	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Idaho	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	35	20	$4	8.8%	100%	$0.01	1	1
Idaho	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Idaho	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.01
Idaho	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	793	15	$2,533	100%	N/A	$0.37	0.00	0.00
Idaho	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,891	15	$5,067	100%	N/A	$0.20	26	32
Idaho	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	566	15	$3,500	80%	98%	$0.71	7	7
Idaho	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,623	15	$1,750	75%	75%	$0.08	25	25
Idaho	Warehouse	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	655	18	$2,400	45%	65%	$0.38	3	3
Idaho	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,085	14	$9,070	5.0%	94%	$0.35	2	2
Idaho	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	566	40	$1,300	2.0%	**%	$15.61	0.00	0.00
Idaho	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,088	30	$50,218	5.0%	N/A	$2.67	1	2
Idaho	Warehouse	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,967	12	$70	10%	39%	$0.00	1	1
Idaho	Warehouse	Heat Pump	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,879	25	$5,266	45%	62%	$0.13	17	17
Idaho	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	511	25	$2,533	25%	85%	$0.48	1	1
Idaho	Warehouse	Heat Pump	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	786	20	$1,739	45%	59%	$0.22	3	3
Idaho	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	472	20	$305	45%	85%	$0.06	2	2
Idaho	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,085	25	$9,400	15%	81%	$0.11	14	14
Idaho	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	1,127	25	$2,900	15%	90%	$0.25	2	2
Idaho	Warehouse	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Idaho	Warehouse	Heat Pump	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	63%	.	0.00	0.00
Idaho	Warehouse	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,278	7	$1,971	90%	85%	$0.11	36	36
Idaho	Warehouse	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	177	10	$621	35%	68%	$0.50	0.54	0.54
Idaho	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	4,035	25	$2	15%	90%	$0.00	7	7
Idaho	Warehouse	Heat Pump	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,432	25	$102	15%	71%	$0.00	4	4
Idaho	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	691	15	$2,027	100%	N/A	$0.34	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	2,624	15	$4,054	100%	N/A	$0.18	11	12
Idaho	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	462	15	$3,500	80%	98%	$0.87	1	1
Idaho	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,143	15	$1,750	75%	75%	$0.09	6	6
Idaho	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,521	14	$9,070	5.0%	94%	$0.43	0.60	0.60
Idaho	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	462	40	$1,300	2.0%	**%	$19.11	0.00	0.00
Idaho	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	4,380	30	$77,164	5.0%	N/A	$1.57	0.89	0.89
Idaho	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	418	25	$2,533	75%	85%	$0.59	1	1
Idaho	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	385	20	$305	45%	85%	$0.08	0.56	0.56
Idaho	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	921	25	$2,900	35%	90%	$0.31	1	1
Idaho	Warehouse	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,143	15	$10,000	10%	75%	$0.54	0.77	0.77
Idaho	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	3,297	25	$2	80%	90%	$0.00	9	9
Idaho	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	936	8	$260	5.0%	95%	$0.05	21	21
Idaho	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	606	8	$680	75%	70%	$0.19	150	150
Idaho	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	504	15	$681	62%	90%	$0.16	134	134
Idaho	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$1,829	90%	50%	$1.00	50	50
Idaho	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$58	75%	95%	$0.19	13	13
Idaho	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	9,110	17	$6,190	5.0%	95%	$0.07	207	207
Idaho	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	936	8	$260	5.0%	95%	$0.05	7	7
Idaho	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	606	8	$680	75%	70%	$0.19	50	50
Idaho	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	504	15	$681	62%	90%	$0.16	41	41
Idaho	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$1,829	90%	50%	$1.00	16	16
Idaho	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$58	75%	95%	$0.19	4	4
Idaho	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	9,110	17	$6,190	5.0%	95%	$0.07	57	57
Idaho	Warehouse	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	298	10	$832	0.5%	95%	$0.40	0.55	0.55
Idaho	Warehouse	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,673	8	$8,000	10%	98%	$0.80	64	64

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,255	8	$6,000	10%	98%	$0.80	47	47
Idaho	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,302	13	$1,121	100%	N/A	$0.11	318	329
Idaho	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	946	13	$219	100%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,002	13	$14,883	25%	N/A	$0.94	156	162
Idaho	Warehouse	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,621	8	$1,829	75%	50%	$0.19	232	232
Idaho	Warehouse	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,096	15	$1,380	100%	N/A	$0.09	0.00	0.00
Idaho	Warehouse	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,605	15	$5,027	95%	N/A	$0.20	424	434
Idaho	Warehouse	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,326	22	$34,967	50%	N/A	$1.48	12	12
Idaho	Warehouse	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,463	15	$251	25%	N/A	$-0.01	0.00	0.00
Idaho	Warehouse	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	702	15	$22,248	100%	N/A	$3.48	0.00	0.00
Idaho	Warehouse	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,238	8	$1,829	75%	50%	$0.25	203	203
Idaho	Warehouse	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	49	11	$19	95%	50%	$0.05	11	11
Idaho	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.11	4	4
Idaho	Warehouse	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	549	10	$832	0.5%	95%	$0.22	0.35	0.35
Idaho	Warehouse	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,392	8	$8,000	10%	98%	$0.96	19	19
Idaho	Warehouse	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,044	8	$6,000	10%	98%	$0.96	0.00	0.00
Idaho	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.11	1	1
Idaho	Warehouse	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,022	13	$9,368	100%	N/A	$0.39	437	438
Idaho	Warehouse	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,981	8	$1,829	75%	50%	$0.10	156	156

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Idaho	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,534	4	$111	85%	N/A	$-0.00	0.00	332
Idaho	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,468	1	$73	100%	N/A	$0.00	0.00	0.00
Idaho	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,038	1	$56	100%	N/A	$-0.01	0.00	0.00
Idaho	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,605	12	$1,381	15%	N/A	$0.02	29	276
Idaho	Warehouse	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	682	8	$1,829	75%	50%	$0.45	40	40
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.82	10%	90%	$0.05	0.13	0.13
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	52	4	$0.00	10%	45%	$0.00	1	1
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	153	10	$0.75	95%	75%	$0.00	52	52
Idaho	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$1	5.0%	86%	$0.04	0.21	0.21
Idaho	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	66	4	$13	60%	90%	$0.06	17	17
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.82	10%	90%	$0.05	0.04	0.04
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	52	4	$0.00	10%	45%	$0.00	0.38	0.38
Idaho	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	153	10	$0.75	95%	75%	$0.00	16	16
Idaho	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$1	5.0%	86%	$0.04	0.07	0.07
Idaho	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	66	4	$13	60%	90%	$0.06	5	5
Idaho	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	105	6	$115	100%	N/A	$0.22	1	1
Idaho	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	105	6	$115	100%	N/A	$0.22	0.75	0.75
Idaho	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	38	6	$4	100%	N/A	$0.02	1	1
Idaho	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	38	6	$4	100%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$146	100%	N/A	$0.27	0.00	0.00
Idaho	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$196	100%	N/A	$0.33	5	7
Idaho	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$11	100%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	15	20	$5	100%	N/A	$0.03	0.00	0.00
Idaho	Warehouse	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	368	20	$39	8.8%	100%	$0.01	11	11
Idaho	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$146	100%	N/A	$0.27	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$196	100%	N/A	$0.33	5	5
Idaho	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$11	100%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	15	20	$5	100%	N/A	$0.03	0.00	0.00
Idaho	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,070	15	$1,750	75%	75%	$0.05	104	104
Idaho	Warehouse	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,017	18	$2,400	45%	65%	$0.25	12	12
Idaho	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	6,105	14	$9,070	5.0%	94%	$0.18	12	12
Idaho	Warehouse	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,070	12	$70	10%	39%	$0.00	6	6
Idaho	Warehouse	Space Heat	Insulation - Ceiling	R-20ci (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,727	25	$5,266	45%	62%	$0.07	90	90
Idaho	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	Existing	1,014	25	$2,533	25%	85%	$0.24	8	8
Idaho	Warehouse	Space Heat	Insulation - Duct	R-5 (ID State Code)	No Insulation	Per Building	Existing	1,221	20	$1,739	45%	59%	$0.14	12	12
Idaho	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	Existing	732	20	$305	45%	85%	$0.04	11	11
Idaho	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30 (ID State Code)	Average R-Value Existing Conditions	Per Building	Existing	14,221	25	$9,400	15%	81%	$0.06	67	67
Idaho	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	Existing	1,821	25	$2,900	15%	90%	$0.16	9	9
Idaho	Warehouse	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (ID State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Idaho	Warehouse	Space Heat	Insulation - Wall	R-13 + 7.5ci (ID State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	63%	.	0.00	0.00
Idaho	Warehouse	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,087	7	$1,971	90%	85%	$0.07	145	145
Idaho	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	Existing	6,261	25	$2	15%	90%	$0.00	28	28
Idaho	Warehouse	Space Heat	Windows-High Efficiency	U-0.35 (ID State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,326	25	$102	15%	71%	$0.00	18	18
Idaho	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,210	15	$1,750	75%	75%	$0.06	25	25
Idaho	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,815	14	$9,070	5.0%	94%	$0.22	3	3
Idaho	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (ID State Code)	Per Building	New	800	25	$2,533	75%	85%	$0.31	5	5
Idaho	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (ID State Code)	Per Building	New	577	20	$305	45%	85%	$0.05	2	2
Idaho	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (ID State Code)	Per Building	New	1,436	25	$2,900	35%	90%	$0.20	4	4
Idaho	Warehouse	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,210	15	$10,000	10%	75%	$0.36	2	2
Idaho	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (ID State Code)	Per Building	New	4,938	25	$2	80%	90%	$0.00	37	37
Idaho	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	255	10	$35	100%	N/A	$0.02	53	53
Idaho	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	255	10	$35	100%	N/A	$0.02	20	20
Idaho	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	97	15	$66	95%	76%	$0.08	10	10

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,448	20	$1,113	55%	45%	$0.05	290	290
Idaho	Warehouse	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	176	7	$50	65%	25%	$0.05	12	12
Idaho	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	71	15	$66	95%	76%	$0.11	7	7
Idaho	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,785	20	$1,113	55%	45%	$0.06	49	49
Idaho	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,431	15	$241	75%	N/A	$0.03	0.04	2
Idaho	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,415	15	$144	75%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,431	15	$241	75%	N/A	$0.03	0.03	0.55
Idaho	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,415	15	$144	75%	N/A	$0.02	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	120	10	$2,778	55%	94%	$3.31	0.64	0.64
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.36	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.40	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.37	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	480	25	$800	2.5%	100%	$0.16	0.12	0.12
Idaho	Warehouse	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	24	12	$25	80%	90%	$0.14	0.17	0.17
Idaho	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	38	9	$5	95%	25%	$-0.00	0.09	0.09
Idaho	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.03	1	1
Idaho	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.00	1	1
Idaho	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	60	10	$78	75%	95%	$0.16	0.44	0.44
Idaho	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	118	10	$2,778	55%	94%	$3.34	0.15	0.15

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Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.36	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.40	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.37	0.00	0.00
Idaho	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	475	25	$640	2.5%	100%	$0.13	0.01	0.01
Idaho	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	37	9	$0.04	95%	25%	$-0.03	0.02	0.02
Idaho	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.03	0.40	0.40
Idaho	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	59	10	$78	75%	95%	$0.16	0.11	0.11
Idaho	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,303	15	$1,241	75%	N/A	$0.12	105	115
Idaho	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	78	15	$54	100%	N/A	$0.08	0.00	0.00
Idaho	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,303	15	$1,241	75%	N/A	$0.12	49	50
Idaho	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	78	15	$54	100%	N/A	$0.08	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	122	10	$2,778	25%	94%	$3.24	3	3
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.36	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.00	0.01
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.40	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.37	0.07	0.08
Idaho	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	491	25	$800	2.5%	100%	$0.16	1	1
Idaho	Warehouse	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (ID State Code)	No Insulation	Per Building	Existing	24	12	$25	80%	90%	$0.14	2	2

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Idaho	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	39	9	$5	95%	25%	$-0.00	1	1
Idaho	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$-0.03	21	21
Idaho	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.00	14	14
Idaho	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	61	10	$78	75%	95%	$0.15	5	5
Idaho	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	119	10	$2,778	25%	94%	$3.33	1	1
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.36	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.40	0.00	0.00
Idaho	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.37	0.02	0.02
Idaho	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	477	25	$640	2.5%	100%	$0.13	0.17	0.17
Idaho	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	37	9	$0.04	95%	25%	$-0.02	0.35	0.35
Idaho	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$-0.03	5	5
Idaho	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	59	10	$78	75%	95%	$0.16	1	1
Utah	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	113	4	$12	100%	N/A	$0.01	19	19
Utah	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	113	4	$12	100%	N/A	$0.01	2	2
Utah	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	456	12	$76	90%	90%	$0.01	46	46
Utah	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	41	12	$107	35%	90%	$0.20	1	1
Utah	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	196	12	$47	95%	85%	$0.02	20	20
Utah	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	341	12	$193	19%	55%	$0.04	0.00	0.00
Utah	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	557	12	$356	55%	21%	$0.05	8	8
Utah	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	962	12	$542	14%	75%	$0.04	12	12
Utah	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	456	12	$76	90%	90%	$0.01	9	9
Utah	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	41	12	$107	35%	90%	$0.20	0.32	0.32

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Utah	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	196	12	$47	95%	85%	$0.02	4	4
Utah	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	341	12	$193	19%	55%	$0.04	0.00	0.00
Utah	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	557	12	$356	55%	21%	$0.05	1	1
Utah	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	962	12	$542	14%	75%	$0.04	2	2
Utah	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	868	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	2,218	15	$635	100%	N/A	$0.02	0.00	0.00
Utah	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	18,370	15	$-13303.807	34%	N/A	$0.01	334	454
Utah	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	605	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	1,547	15	$508	100%	N/A	$0.03	0.00	0.00
Utah	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	12,811	15	$-9699.0611	34%	N/A	$0.01	66	69
Utah	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	3,049	15	$2,450	80%	98%	$0.06	1,640	1,640
Utah	Grocery	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	4,573	10	$3,969	10%	90%	$0.07	260	260
Utah	Grocery	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	3,049	5	$1,120	95%	72%	$0.03	1,305	1,305
Utah	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	7,622	15	$14,583	50%	94%	$0.15	2,082	2,082
Utah	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,049	15	$1,225	75%	76%	$0.03	887	887
Utah	Grocery	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	762	18	$1,680	45%	65%	$0.14	108	108
Utah	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,372	12	$5,450	10%	75%	$0.25	49	49
Utah	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	3,049	40	$70,910	2.0%	**%	$1.79	0.00	0.00
Utah	Grocery	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,524	12	$139	10%	39%	$0.00	28	28
Utah	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	117	25	$3,686	45%	61%	$0.19	15	15
Utah	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	10	25	$1,773	25%	85%	$0.73	1	1
Utah	Grocery	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	914	20	$1,217	45%	59%	$0.08	115	115
Utah	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	548	20	$213	45%	85%	$0.02	99	99
Utah	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,580	15%	82%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,030	15%	90%	.	0.00	0.00
Utah	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,691	10%	85%	.	0.00	0.00
Utah	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$16,176	10%	65%	.	0.00	0.00
Utah	Grocery	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,811	7	$1,380	90%	85%	$0.02	1,373	1,373
Utah	Grocery	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	1,010	10	$1,227	35%	68%	$0.09	102	102
Utah	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	4,933	25	$4	15%	90%	$0.00	280	280
Utah	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,231	25	$203	15%	71%	$0.00	185	185
Utah	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,968	15	$2,450	80%	98%	$0.10	212	212
Utah	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	4,922	15	$14,583	50%	94%	$0.23	293	293
Utah	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,968	15	$1,225	75%	76%	$0.04	128	128
Utah	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	885	12	$5,450	10%	75%	$0.42	7	7
Utah	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,968	40	$70,910	2.0%	**%	$2.77	0.00	0.00
Utah	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	6	25	$1,773	75%	85%	$1.89	0.34	0.34
Utah	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	354	20	$213	45%	85%	$0.04	10	10
Utah	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	3,185	25	$4	80%	90%	$0.00	215	215
Utah	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	39	6	$0.84	100%	N/A	$0.00	35	35
Utah	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	39	6	$0.84	100%	N/A	$0.00	7	7
Utah	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	15	4	$17	100%	N/A	$0.09	0.79	0.79
Utah	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	15	4	$17	100%	N/A	$0.09	1	1
Utah	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	11	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	31	20	$0.82	100%	N/A	$0.00	0.00	0.48
Utah	Grocery	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	214	20	$29	8.8%	100%	$0.01	16	16
Utah	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	11	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	31	20	$0.82	100%	N/A	$0.00	0.00	0.36
Utah	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,982	15	$2,364	100%	N/A	$0.09	0.00	0.00
Utah	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,021	15	$4,729	100%	N/A	$0.07	137	164

Table C-2.2. Commercial Measure Details

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Utah	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	3,728	15	$2,450	80%	98%	$0.05	135	135
Utah	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	5,501	15	$1,225	75%	76%	$0.02	137	137
Utah	Grocery	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,375	18	$1,680	45%	65%	$0.09	16	16
Utah	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,658	14	$12,040	5.0%	94%	$0.35	5	5
Utah	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,475	12	$5,450	10%	75%	$0.17	7	7
Utah	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	3,728	40	$70,910	2.0%	**%	$1.46	0.00	0.00
Utah	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	13,948	30	$40,203	5.0%	N/A	$0.77	12	17
Utah	Grocery	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,125	12	$139	10%	39%	$0.00	6	6
Utah	Grocery	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,589	25	$3,686	45%	61%	$0.08	40	40
Utah	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	452	25	$1,773	25%	85%	$0.30	3	3
Utah	Grocery	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	1,650	20	$1,217	45%	59%	$0.06	17	17
Utah	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	990	20	$213	45%	85%	$0.02	14	14
Utah	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,678	25	$6,580	15%	82%	$0.14	17	17
Utah	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	725	25	$2,030	15%	90%	$0.22	3	3
Utah	Grocery	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,691	10%	85%	.	0.00	0.00
Utah	Grocery	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$16,176	10%	65%	.	0.00	0.00
Utah	Grocery	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,876	7	$1,380	90%	85%	$0.02	205	205
Utah	Grocery	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	1,010	10	$1,227	35%	68%	$0.09	8	8
Utah	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	8,901	25	$4	15%	90%	$0.00	42	42
Utah	Grocery	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,634	25	$203	15%	71%	$0.00	27	27
Utah	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	1,234	15	$1,891	100%	N/A	$0.12	0.00	0.00
Utah	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	2,891	15	$3,783	100%	N/A	$0.10	21	21
Utah	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,071	15	$2,450	80%	98%	$0.09	15	15
Utah	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,055	15	$1,225	75%	76%	$0.03	15	15
Utah	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,476	14	$12,040	5.0%	94%	$0.63	0.58	0.58

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Utah	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,375	12	$5,450	10%	75%	$0.30	0.88	0.88
Utah	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,071	40	$70,910	2.0%	**%	$2.63	0.00	0.00
Utah	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	8,816	30	$72,020	5.0%	N/A	$0.63	2	2
Utah	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	251	25	$1,773	75%	85%	$0.54	1	1
Utah	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	550	20	$213	45%	85%	$0.03	1	1
Utah	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	402	25	$2,030	35%	90%	$0.39	0.78	0.78
Utah	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	4,944	25	$4	80%	90%	$0.00	26	26
Utah	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	655	8	$182	5.0%	95%	$0.02	33	33
Utah	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,592	8	$568	75%	70%	$0.03	892	892
Utah	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,323	15	$1,787	62%	90%	$0.10	788	788
Utah	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	668	8	$1,280	45%	54%	$0.15	135	135
Utah	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	66	13	$99	75%	95%	$0.11	50	50
Utah	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	6,377	17	$4,333	5.0%	95%	$0.05	323	323
Utah	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	655	8	$182	5.0%	95%	$0.02	6	6
Utah	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,592	8	$568	75%	70%	$0.03	179	179
Utah	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,323	15	$1,787	62%	90%	$0.10	158	158
Utah	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	668	8	$1,280	45%	54%	$0.15	27	27
Utah	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	66	13	$99	75%	95%	$0.11	9	9
Utah	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	6,377	17	$4,333	5.0%	95%	$0.05	59	59
Utah	Grocery	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,077	10	$582	5.0%	95%	$0.04	47	47
Utah	Grocery	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	6,438	8	$6,693	5.0%	96%	$0.08	285	285
Utah	Grocery	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,828	8	$5,019	5.0%	96%	$0.08	213	213
Utah	Grocery	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	5,839	6	$2,166	85%	80%	$0.03	3,672	3,672
Utah	Grocery	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	3,582	6	$1,818	85%	80%	$0.04	2,252	2,252

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Utah	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,383	13	$-135.76657	100%	N/A	$0.00	0.00	0.00
Utah	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,571	13	$1,935	100%	N/A	$0.03	2,296	2,491
Utah	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	7,432	13	$33,391	25%	N/A	$0.35	955	1,036
Utah	Grocery	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	4,901	8	$1,280	5.0%	54%	$0.02	106	106
Utah	Grocery	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,454	15	$468	100%	N/A	$0.02	0.00	0.00
Utah	Grocery	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,790	15	$1,965	95%	N/A	$0.08	689	690
Utah	Grocery	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,596	13	$14,280	50%	N/A	$0.69	28	28
Utah	Grocery	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,016	9	$4	25%	N/A	$0.00	0.00	0.00
Utah	Grocery	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	506	15	$9,048	100%	N/A	$1.37	0.00	0.00
Utah	Grocery	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	673	8	$1,280	5.0%	54%	$0.15	18	18
Utah	Grocery	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	607	11	$236	95%	50%	$0.03	308	308
Utah	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	121	13	$103	95%	98%	$0.07	120	120
Utah	Grocery	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,177	10	$582	5.0%	95%	$0.04	10	10
Utah	Grocery	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	5,509	8	$6,693	5.0%	96%	$0.09	51	51
Utah	Grocery	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,132	8	$5,019	5.0%	96%	$0.09	38	38
Utah	Grocery	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	4,518	6	$1,103	85%	80%	$0.02	599	599
Utah	Grocery	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	2,038	6	$794	85%	80%	$0.03	270	270
Utah	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	121	13	$103	95%	98%	$0.07	22	22
Utah	Grocery	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	5,298	13	$17,278	100%	N/A	$0.25	1,035	1,043

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	5,357	8	$1,280	5.0%	54%	$0.02	25	25
Utah	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,466	4	$108	85%	N/A	$0.00	0.00	365
Utah	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,779	1	$71	100%	N/A	$0.00	0.00	0.00
Utah	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,098	1	$56	100%	N/A	$0.00	0.00	0.00
Utah	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,578	12	$1,340	15%	N/A	$0.01	123	691
Utah	Grocery	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	705	8	$1,280	5.0%	54%	$0.14	8	8
Utah	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	4	7	$1	10%	90%	$0.02	0.45	0.45
Utah	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	60	4	$0.00	10%	45%	$0.00	2	2
Utah	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	23	23
Utah	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.05	647	647
Utah	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	16	4	$1	5.0%	86%	$0.01	0.73	0.73
Utah	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	140	4	$28	60%	90%	$0.02	80	80
Utah	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	4	7	$1	10%	90%	$0.02	0.09	0.09
Utah	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	60	4	$0.00	10%	45%	$0.00	0.58	0.58
Utah	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	4	4
Utah	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.05	129	129
Utah	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	16	4	$1	5.0%	86%	$0.01	0.14	0.14
Utah	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	140	4	$28	60%	90%	$0.02	16	16
Utah	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	122	6	$132	100%	N/A	$0.08	3	3
Utah	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	122	6	$132	100%	N/A	$0.08	1	1
Utah	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	49	6	$5	100%	N/A	$0.01	4	4
Utah	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	49	6	$5	100%	N/A	$0.01	0.00	0.00
Utah	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	6,846	8	$588	90%	45%	$0.01	2,139	2,139
Utah	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	11,358	15	$2,759	100%	76%	$0.02	6,650	6,650
Utah	Grocery	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	7,847	15	$849	95%	90%	$0.01	5,177	5,177

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Utah	Grocery	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	583	15	$383	95%	90%	$0.05	384	384
Utah	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	7,682	10	$6,372	95%	80%	$0.06	4,505	4,505
Utah	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	10,431	10	$8,639	95%	80%	$0.06	6,116	6,116
Utah	Grocery	Refrigeration	Compressor VSD Retrofit	VSD Compressor	Constant Speed Compressor	Per Building	Existing	17,533	13	$3,113	60%	77%	$0.01	4,925	4,925
Utah	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	2,035	10	$3,300	95%	68%	$0.12	757	757
Utah	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	1,129	8	$110	50%	95%	$0.01	414	414
Utah	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	Existing	4,847	15	$1,649	50%	81%	$0.03	1,121	1,121
Utah	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	477	12	$452	95%	77%	$0.07	267	267
Utah	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	2,823	5	$450	95%	85%	$0.01	1,286	1,286
Utah	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	9,520	3	$1,493	95%	85%	$0.01	4,286	4,286
Utah	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	375	12	$-88.211516	95%	81%	$0.04	222	222
Utah	Grocery	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	4,303	13	$614	80%	90%	$0.01	1,633	1,633
Utah	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	683	4	$493	95%	20%	$0.06	67	67
Utah	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	7,890	15	$1,956	75%	95%	$0.02	2,903	2,903
Utah	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	217	10	$40	100%	85%	$0.01	142	142
Utah	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	1,146	15	$1,272	75%	95%	$0.09	630	630
Utah	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	387	15	$349	75%	95%	$0.07	136	136
Utah	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	6,846	8	$588	90%	45%	$0.01	429	429
Utah	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	11,358	15	$2,759	100%	76%	$0.02	1,294	1,294
Utah	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	7,682	10	$6,372	95%	80%	$0.06	903	903
Utah	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	10,431	10	$8,639	95%	80%	$0.06	1,227	1,227
Utah	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	2,035	10	$3,300	95%	68%	$0.12	169	169
Utah	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	1,129	8	$110	50%	95%	$0.01	83	83
Utah	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	New	4,847	15	$1,649	50%	81%	$0.03	243	243
Utah	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	477	12	$452	95%	77%	$0.07	53	53

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Utah	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	2,823	5	$450	95%	85%	$0.01	288	288
Utah	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	4,760	3	$578	80%	90%	$0.01	427	427
Utah	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	375	12	$-88.211516	95%	81%	$0.04	44	44
Utah	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	683	4	$493	95%	20%	$0.06	15	15
Utah	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	7,890	15	$1,956	75%	95%	$0.02	662	662
Utah	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	217	10	$40	100%	85%	$0.01	28	28
Utah	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	1,146	15	$1,272	75%	95%	$0.09	122	122
Utah	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	387	15	$349	75%	95%	$0.07	31	31
Utah	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	383	20	$1,044	100%	N/A	$0.21	0.00	0.00
Utah	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	430	20	$1,400	100%	N/A	$0.25	115	139
Utah	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	337	20	$81	100%	N/A	$0.02	0.00	0.00
Utah	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	107	20	$37	100%	N/A	$0.03	0.00	0.00
Utah	Grocery	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,685	20	$269	8.8%	100%	$0.01	186	186
Utah	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	383	20	$1,044	100%	N/A	$0.21	0.00	0.00
Utah	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	430	20	$1,400	100%	N/A	$0.25	59	61
Utah	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	337	20	$81	100%	N/A	$0.02	0.00	0.00
Utah	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	107	20	$37	100%	N/A	$0.03	0.00	0.00
Utah	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,835	15	$1,225	75%	76%	$0.02	337	337
Utah	Grocery	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	708	18	$1,680	45%	65%	$0.09	41	41
Utah	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,252	14	$12,040	5.0%	94%	$0.22	39	39
Utah	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,275	12	$5,450	10%	75%	$0.16	18	18
Utah	Grocery	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,835	12	$139	10%	39%	$0.00	21	21
Utah	Grocery	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	5,577	25	$3,686	45%	61%	$0.05	296	296
Utah	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	706	25	$1,773	25%	85%	$0.19	27	27
Utah	Grocery	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	850	20	$1,217	45%	59%	$0.05	41	41
Utah	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	510	20	$213	45%	85%	$0.02	35	35
Utah	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,817	25	$6,580	15%	82%	$0.07	150	150
Utah	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	1,268	25	$2,030	15%	90%	$0.12	29	29

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Utah	Grocery	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,691	10%	85%	.	0.00	0.00
Utah	Grocery	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$16,176	10%	65%	.	0.00	0.00
Utah	Grocery	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,543	7	$1,380	90%	85%	$0.01	470	470
Utah	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	4,587	25	$4	15%	90%	$0.00	96	96
Utah	Grocery	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,934	25	$203	15%	71%	$0.00	64	64
Utah	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,050	15	$1,225	75%	76%	$0.03	25	25
Utah	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,575	14	$12,040	5.0%	94%	$0.59	2	2
Utah	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	472	12	$5,450	10%	75%	$0.31	1	1
Utah	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	261	25	$1,773	75%	85%	$0.51	4	4
Utah	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	189	20	$213	45%	85%	$0.03	2	2
Utah	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	469	25	$2,030	35%	90%	$0.33	4	4
Utah	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,698	25	$4	80%	90%	$0.00	40	40
Utah	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	139	10	$19	100%	N/A	$0.01	69	69
Utah	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	139	10	$19	100%	N/A	$0.01	15	15
Utah	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	5,614	10	$858	5.0%	90%	$0.01	269	269
Utah	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,400	95%	65%	$0.16	738	738
Utah	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	286	15	$46	95%	76%	$0.01	212	212
Utah	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	7,157	20	$779	55%	45%	$0.01	1,815	1,815
Utah	Grocery	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	123	7	$35	65%	25%	$0.02	0.00	0.00
Utah	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	5,432	10	$858	5.0%	90%	$0.01	52	52
Utah	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,400	95%	65%	$0.16	144	144
Utah	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	277	15	$46	95%	76%	$0.01	41	41
Utah	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	6,925	20	$779	55%	45%	$0.01	263	263

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,168	15	$725	75%	N/A	$0.05	0.11	2
Utah	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,155	15	$433	75%	N/A	$0.03	0.00	0.00
Utah	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,126	15	$725	75%	N/A	$0.05	0.02	0.46
Utah	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,114	15	$433	75%	N/A	$0.03	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	98	10	$1,944	75%	94%	$1.52	0.94	0.94
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	45%	35%	$0.21	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	45%	35%	$0.05	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	45%	55%	$0.23	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	45%	55%	$0.22	0.04	0.05
Utah	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	74	12	$42	40%	95%	$0.04	0.38	0.47
Utah	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	68	12	$42	40%	94%	$0.05	0.34	0.43
Utah	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	392	25	$1,800	2.5%	100%	$0.35	0.12	0.12
Utah	Grocery	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	19	12	$57	80%	90%	$0.22	0.17	0.17
Utah	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	31	9	$19	95%	25%	$0.05	0.10	0.10
Utah	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	74%	$0.02	6	6
Utah	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	49	10	$274	75%	95%	$0.43	0.47	0.47
Utah	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	223	10	$6,370	55%	94%	$2.19	1	1
Utah	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	93	10	$1,944	75%	94%	$1.59	0.14	0.14

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	45%	35%	$0.21	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	45%	35%	$0.05	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	45%	55%	$0.23	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	45%	55%	$0.22	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	70	12	$39	40%	95%	$0.04	0.05	0.05
Utah	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	64	12	$39	40%	94%	$0.05	0.05	0.05
Utah	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	374	25	$1,440	2.5%	100%	$0.30	0.00	0.00
Utah	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	29	9	$0.14	95%	25%	$0.00	0.01	0.01
Utah	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	74%	$0.02	0.96	0.96
Utah	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	46	10	$274	75%	95%	$0.45	0.07	0.07
Utah	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	213	10	$6,370	55%	94%	$2.29	0.15	0.15
Utah	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,064	15	$3,725	75%	N/A	$0.27	101	128
Utah	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	63	15	$162	100%	N/A	$0.20	0.00	0.00
Utah	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,026	15	$3,725	75%	N/A	$0.28	23	24
Utah	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	61	15	$162	100%	N/A	$0.20	0.00	0.00
Utah	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	100	10	$1,944	50%	94%	$1.49	8	8
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.21	0.00	0.04
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.05	0.12	0.14

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.23	0.00	0.12
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.22	0.93	1
Utah	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	74	12	$42	50%	95%	$0.04	6	7
Utah	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	68	12	$42	50%	95%	$0.05	5	6
Utah	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	400	25	$1,800	2.5%	100%	$0.34	1	1
Utah	Grocery	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	20	12	$57	80%	90%	$0.22	2	2
Utah	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	31	9	$19	95%	25%	$0.05	1	1
Utah	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	74%	$0.02	80	80
Utah	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	50	10	$274	75%	95%	$0.42	6	6
Utah	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	228	10	$6,370	55%	94%	$2.14	14	14
Utah	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	93	10	$1,944	50%	94%	$1.59	1	1
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.21	0.00	0.00
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.05	0.02	0.02
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.23	0.00	0.02
Utah	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.22	0.15	0.15
Utah	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	70	12	$39	50%	95%	$0.04	1	1
Utah	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	64	12	$39	50%	95%	$0.05	0.94	0.94
Utah	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	375	25	$1,440	2.5%	100%	$0.29	0.09	0.09

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	29	9	$0.14	95%	25%	$0.00	0.22	0.22
Utah	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	74%	$0.02	14	14
Utah	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	46	10	$274	75%	95%	$0.45	1	1
Utah	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	214	10	$6,370	55%	94%	$2.28	2	2
Utah	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	827	4	$94	100%	N/A	$0.01	242	283
Utah	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	1,276	4	$94	95%	30%	$0.01	659	659
Utah	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	827	4	$94	100%	N/A	$0.01	24	25
Utah	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	1,276	4	$94	95%	30%	$0.01	138	138
Utah	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	34	12	$5	90%	90%	$0.01	0.79	0.79
Utah	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	3	12	$8	25%	90%	$0.20	0.02	0.02
Utah	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	39	12	$9	95%	85%	$0.02	0.98	0.98
Utah	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	69	12	$39	7.0%	55%	$0.04	0.08	0.08
Utah	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	112	12	$72	15%	21%	$0.05	0.11	0.11
Utah	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	195	12	$109	11%	75%	$0.04	0.47	0.47
Utah	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	34	12	$5	90%	90%	$0.01	0.15	0.15
Utah	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	3	12	$8	25%	90%	$0.20	0.00	0.00
Utah	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	39	12	$9	95%	85%	$0.02	0.19	0.19
Utah	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	69	12	$39	7.0%	55%	$0.04	0.01	0.01
Utah	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	112	12	$72	15%	21%	$0.05	0.02	0.02
Utah	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	195	12	$109	11%	75%	$0.04	0.09	0.09
Utah	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,168	15	$1,675	5.0%	94%	$0.11	11	11
Utah	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	146	5	$1,141	95%	81%	$0.60	23	23
Utah	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	883	10	$5,269	25%	70%	$0.46	32	32
Utah	Health	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	584	15	$12,233	45%	90%	$1.61	49	49

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Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	2,639	20	$2,171	100%	N/A	$0.06	288	361
Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	439	20	$361	100%	N/A	$0.06	0.00	0.00
Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,613	20	$1,327	100%	N/A	$0.06	0.00	0.00
Utah	Health	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,506	15	$20,368	15%	67%	$0.28	72	72
Utah	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,168	15	$2,345	15%	98%	$0.15	34	34
Utah	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	935	7	$651	10%	94%	$0.05	17	17
Utah	Health	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	1,636	15	$58	65%	35%	$0.00	72	72
Utah	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	467	13	$471	75%	65%	$0.08	42	42
Utah	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,168	15	$1,172	75%	76%	$0.05	122	122
Utah	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	526	12	$5,450	2.5%	75%	$0.50	1	1
Utah	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,168	40	$67,871	2.0%	**%	$4.46	0.00	0.00
Utah	Health	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	584	12	$173	10%	39%	$0.01	3	3
Utah	Health	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	18	25	$3,528	45%	63%	$0.33	0.92	0.92
Utah	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	4	25	$1,697	25%	85%	$0.74	0.14	0.14
Utah	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,298	15%	82%	.	0.00	0.00
Utah	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$1,943	15%	90%	.	0.00	0.00
Utah	Health	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,618	10%	85%	.	0.00	0.00
Utah	Health	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$15,483	10%	70%	.	0.00	0.00
Utah	Health	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (UT State Code)	No Insulation	Per Building	Existing	175	15	$137	65%	45%	$0.06	8	8
Utah	Health	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,461	7	$1,320	90%	85%	$0.04	193	193
Utah	Health	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	1,276	10	$1,531	35%	68%	$0.09	47	47
Utah	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,891	25	$6	15%	90%	$0.00	38	38
Utah	Health	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,622	25	$253	15%	75%	$0.01	27	27
Utah	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	596	15	$893	5.0%	94%	$0.11	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	74	5	$1,141	95%	81%	$1.18	2	2
Utah	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	451	10	$4,742	25%	70%	$0.81	3	3
Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	1,586	20	$1,954	100%	N/A	$0.09	59	60
Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	264	20	$325	100%	N/A	$0.09	0.00	0.00
Utah	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	969	20	$1,194	100%	N/A	$0.09	0.00	0.00
Utah	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	596	15	$2,345	15%	98%	$0.30	3	3
Utah	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	477	7	$586	10%	94%	$0.09	1	1
Utah	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	238	13	$424	75%	65%	$0.14	4	4
Utah	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	596	15	$1,172	75%	76%	$0.08	13	13
Utah	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	268	12	$5,450	2.5%	75%	$0.83	0.18	0.18
Utah	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	596	40	$67,871	2.0%	**%	$8.74	0.00	0.00
Utah	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	2	25	$1,697	75%	85%	$0.97	0.03	0.03
Utah	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	965	25	$6	80%	90%	$0.00	22	22
Utah	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	690	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	1,324	15	$533	100%	N/A	$0.03	1,023	1,365
Utah	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	8,899	15	$-11457.056	0.0%	N/A	$0.02	0.00	0.00
Utah	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	417	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	799	15	$426	100%	N/A	$0.04	178	184
Utah	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	5,372	15	$-8559.2502	0.0%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,716	15	$1,675	5.0%	94%	$0.07	116	116
Utah	Health	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,148	15	$20,368	15%	67%	$0.22	751	751
Utah	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,716	15	$2,345	15%	98%	$0.10	352	352
Utah	Health	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,574	10	$3,798	10%	30%	$0.11	106	106
Utah	Health	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,716	5	$1,072	95%	72%	$0.05	1,615	1,615
Utah	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	4,290	15	$13,958	50%	94%	$0.25	2,576	2,576
Utah	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,716	15	$1,172	75%	76%	$0.04	1,098	1,098
Utah	Health	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	429	18	$1,608	45%	65%	$0.21	133	133
Utah	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	772	12	$5,450	2.5%	75%	$0.39	15	15
Utah	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,716	40	$67,871	2.0%	**%	$3.04	0.00	0.00
Utah	Health	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	858	12	$173	10%	39%	$0.01	35	35
Utah	Health	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	27	25	$3,528	45%	63%	$0.32	8	8
Utah	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	5	25	$1,697	25%	85%	$0.73	1	1
Utah	Health	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	514	20	$1,165	45%	60%	$0.12	145	145
Utah	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	308	20	$204	45%	85%	$0.04	123	123
Utah	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,298	15%	82%	.	0.00	0.00
Utah	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$1,943	15%	90%	.	0.00	0.00
Utah	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,618	10%	85%	.	0.00	0.00
Utah	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$15,483	10%	70%	.	0.00	0.00
Utah	Health	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,145	7	$1,320	90%	85%	$0.03	1,705	1,705
Utah	Health	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	1,276	10	$1,531	35%	68%	$0.09	284	284
Utah	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,776	25	$6	15%	90%	$0.00	344	344
Utah	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,381	25	$253	15%	75%	$0.01	241	241
Utah	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	956	15	$893	5.0%	94%	$0.07	13	13
Utah	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	956	15	$2,345	15%	98%	$0.19	40	40

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,391	15	$13,958	50%	94%	$0.45	322	322
Utah	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	956	15	$1,172	75%	76%	$0.06	141	141
Utah	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	430	12	$5,450	2.5%	75%	$0.63	1	1
Utah	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	956	40	$67,871	2.0%	**%	$5.45	0.00	0.00
Utah	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	3	25	$1,697	75%	85%	$0.96	0.38	0.38
Utah	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	172	20	$204	45%	85%	$0.06	11	11
Utah	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,547	25	$6	80%	90%	$0.00	237	237
Utah	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	19	6	$0.41	100%	N/A	$0.00	35	35
Utah	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	19	6	$0.41	100%	N/A	$0.00	7	7
Utah	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	111	4	$126	100%	N/A	$0.09	11	11
Utah	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	111	4	$126	100%	N/A	$0.09	15	15
Utah	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$0.45	100%	N/A	$0.00	0.00	0.54
Utah	Health	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	119	20	$16	8.8%	100%	$0.01	18	18
Utah	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.91	100%	N/A	$0.01	0.00	0.00
Utah	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	17	20	$0.45	100%	N/A	$0.00	0.00	0.41
Utah	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	2,493	15	$2,179	100%	N/A	$0.07	95	115
Utah	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,562	15	$1,675	5.0%	94%	$0.08	5	5
Utah	Health	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	11,635	15	$20,368	15%	67%	$0.13	94	94
Utah	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,562	15	$2,345	15%	98%	$0.12	17	17
Utah	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,878	15	$1,172	75%	76%	$0.02	170	170
Utah	Health	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	969	18	$1,608	45%	65%	$0.13	20	20
Utah	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,473	14	$11,524	5.0%	94%	$0.25	11	11
Utah	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,745	12	$5,450	2.5%	75%	$0.24	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,562	40	$67,871	2.0%	**%	$3.34	0.00	0.00
Utah	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	9,832	30	$34,973	5.0%	N/A	$1.05	5	6
Utah	Health	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,908	12	$173	10%	39%	$0.00	8	8
Utah	Health	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,704	25	$3,528	45%	63%	$0.10	54	54
Utah	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	579	25	$1,697	25%	85%	$0.23	8	8
Utah	Health	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	1,163	20	$1,165	45%	60%	$0.08	22	22
Utah	Health	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	698	20	$204	45%	85%	$0.02	18	18
Utah	Health	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,151	25	$6,298	15%	82%	$0.08	52	52
Utah	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	1,199	25	$1,943	15%	90%	$0.12	11	11
Utah	Health	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,618	10%	85%	.	0.00	0.00
Utah	Health	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$15,483	10%	70%	.	0.00	0.00
Utah	Health	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,848	7	$1,320	90%	85%	$0.02	251	251
Utah	Health	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	1,276	10	$1,531	35%	68%	$0.09	18	18
Utah	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	6,275	25	$6	15%	90%	$0.00	51	51
Utah	Health	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,382	25	$253	15%	75%	$0.00	36	36
Utah	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	1,685	15	$1,743	100%	N/A	$0.08	17	18
Utah	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,008	15	$893	5.0%	94%	$0.07	0.79	0.79
Utah	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,008	15	$2,345	15%	98%	$0.18	2	2
Utah	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,502	15	$1,172	75%	76%	$0.04	23	23
Utah	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,240	14	$11,524	5.0%	94%	$0.40	1	1
Utah	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,126	12	$5,450	2.5%	75%	$0.37	0.32	0.32
Utah	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,008	40	$67,871	2.0%	**%	$5.17	0.00	0.00
Utah	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	6,533	30	$69,417	5.0%	N/A	$0.82	1	1
Utah	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	373	25	$1,697	75%	85%	$0.35	2	2
Utah	Health	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	450	20	$204	45%	85%	$0.03	1	1

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Utah	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	773	25	$1,943	35%	90%	$0.19	2	2
Utah	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	4,048	25	$6	80%	90%	$0.00	38	38
Utah	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	627	8	$174	5.0%	95%	$0.02	64	64
Utah	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	842	8	$556	75%	70%	$0.05	952	952
Utah	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	699	15	$945	62%	90%	$0.10	844	844
Utah	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	312	8	$1,225	90%	45%	$0.30	211	211
Utah	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	4	13	$6	75%	95%	$0.11	6	6
Utah	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	6,103	17	$4,147	5.0%	95%	$0.05	627	627
Utah	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	627	8	$174	5.0%	95%	$0.02	12	12
Utah	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	842	8	$556	75%	70%	$0.05	191	191
Utah	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	699	15	$945	62%	90%	$0.10	169	169
Utah	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	312	8	$1,225	90%	45%	$0.30	42	42
Utah	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	4	13	$6	75%	95%	$0.11	1	1
Utah	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	6,103	17	$4,147	5.0%	95%	$0.05	114	114
Utah	Health	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	696	10	$557	25%	95%	$0.06	329	329
Utah	Health	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,257	8	$6,548	15%	51%	$0.12	645	645
Utah	Health	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,192	8	$4,911	15%	51%	$0.12	479	479
Utah	Health	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	159	6	$59	15%	80%	$0.03	38	38
Utah	Health	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	97	6	$49	10%	80%	$0.04	15	15
Utah	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	850	13	$2,557	100%	N/A	$0.23	0.00	0.00
Utah	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,104	13	$-904.4516	100%	N/A	$0.00	0.00	0.00
Utah	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,977	13	$3,060	47%	N/A	$0.08	4	4
Utah	Health	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,805	8	$1,225	75%	45%	$0.03	1,823	1,823

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	137	15	$74	100%	N/A	$0.04	0.00	0.00
Utah	Health	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	173	15	$250	95%	N/A	$0.11	154	156
Utah	Health	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	153	16	$1,702	50%	N/A	$0.85	6	6
Utah	Health	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	95	11	$19	25%	N/A	$0.02	0.00	0.00
Utah	Health	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	45	15	$1,086	100%	N/A	$1.84	0.00	0.00
Utah	Health	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	61	8	$1,225	75%	45%	$1.52	40	40
Utah	Health	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	974	11	$379	95%	50%	$0.03	1,001	1,001
Utah	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	194	13	$166	95%	98%	$0.07	392	392
Utah	Health	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	632	10	$557	25%	95%	$0.07	60	60
Utah	Health	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,965	8	$6,548	15%	51%	$0.17	90	90
Utah	Health	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,223	8	$4,911	15%	51%	$0.17	67	67
Utah	Health	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	123	6	$30	15%	80%	$0.02	5	5
Utah	Health	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	55	6	$21	15%	80%	$0.03	2	2
Utah	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	194	13	$166	95%	98%	$0.07	72	72
Utah	Health	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,531	13	$1,781	100%	N/A	$0.05	1,044	1,049
Utah	Health	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,547	8	$1,225	75%	45%	$0.04	331	331
Utah	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,018	4	$171	85%	N/A	$0.00	0.00	2,436
Utah	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,765	1	$113	100%	N/A	$0.00	0.00	0.00
Utah	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,248	1	$87	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

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Utah	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,168	12	$2,123	15%	N/A	$0.01	358	2,463
Utah	Health	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	997	8	$1,225	75%	45%	$0.09	256	256
Utah	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	15	7	$4	10%	90%	$0.02	3	3
Utah	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	29	4	$0.00	10%	45%	$0.00	2	2
Utah	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	91	10	$0.45	95%	75%	$0.00	141	141
Utah	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	41	10	$29	95%	86%	$0.05	72	72
Utah	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	54	4	$1	5.0%	86%	$0.00	5	5
Utah	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	446	4	$89	60%	90%	$0.02	521	521
Utah	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	15	7	$4	10%	90%	$0.02	0.62	0.62
Utah	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	29	4	$0.00	10%	45%	$0.00	0.57	0.57
Utah	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	91	10	$0.45	95%	75%	$0.00	28	28
Utah	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	41	10	$29	95%	86%	$0.05	14	14
Utah	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	54	4	$1	5.0%	86%	$0.00	1	1
Utah	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	446	4	$89	60%	90%	$0.02	104	104
Utah	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	59	6	$65	100%	N/A	$0.08	3	3
Utah	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	59	6	$65	100%	N/A	$0.08	1	1
Utah	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	277	6	$32	100%	N/A	$0.01	53	53
Utah	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	277	6	$32	100%	N/A	$0.01	0.01	0.01
Utah	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	186	8	$16	15%	45%	$0.01	8	8
Utah	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	309	15	$75	5.0%	76%	$0.02	7	7
Utah	Health	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	214	15	$23	5.0%	90%	$0.01	6	6
Utah	Health	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	15	15	$10	5.0%	90%	$0.05	0.47	0.47
Utah	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	209	10	$173	2.5%	80%	$0.06	2	2
Utah	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	284	10	$235	2.5%	80%	$0.06	3	3
Utah	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	55	10	$3,300	5.0%	68%	$4.57	1	1
Utah	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	30	8	$3	5.0%	95%	$0.01	0.96	0.96
Utah	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	13	12	$12	95%	77%	$0.07	6	6

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Utah	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	259	3	$40	10%	85%	$0.01	14	14
Utah	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	10	12	$-2.5142299	95%	81%	$0.04	5	5
Utah	Health	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	117	13	$16	5.0%	90%	$0.01	3	3
Utah	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	19	4	$14	15%	20%	$0.06	0.37	0.37
Utah	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	5	10	$1	1.0%	85%	$0.01	0.03	0.03
Utah	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	31	15	$34	2.5%	95%	$0.09	0.48	0.48
Utah	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	11	15	$9	2.5%	95%	$0.07	0.16	0.16
Utah	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	186	8	$16	15%	45%	$0.01	1	1
Utah	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	309	15	$75	5.0%	76%	$0.02	1	1
Utah	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	209	10	$173	2.5%	80%	$0.06	0.55	0.55
Utah	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	284	10	$235	2.5%	80%	$0.06	0.75	0.75
Utah	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	55	10	$3,300	5.0%	68%	$4.57	0.24	0.24
Utah	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	30	8	$3	5.0%	95%	$0.01	0.19	0.19
Utah	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	13	12	$12	95%	77%	$0.07	1	1
Utah	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	129	3	$15	5.0%	90%	$0.01	0.76	0.76
Utah	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	10	12	$-2.5142299	95%	81%	$0.04	1	1
Utah	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	19	4	$14	15%	20%	$0.06	0.07	0.07
Utah	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	5	10	$1	1.0%	85%	$0.01	0.00	0.00
Utah	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	31	15	$34	2.5%	95%	$0.09	0.09	0.09
Utah	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	11	15	$9	2.5%	95%	$0.07	0.03	0.03
Utah	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	213	20	$581	100%	N/A	$0.21	0.00	0.00
Utah	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	239	20	$779	100%	N/A	$0.25	129	157
Utah	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	187	20	$45	100%	N/A	$0.02	0.00	0.00
Utah	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	59	20	$20	100%	N/A	$0.03	0.00	0.00
Utah	Health	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,495	20	$149	8.8%	100%	$0.01	210	210
Utah	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	213	20	$581	100%	N/A	$0.21	0.00	0.00

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Utah	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	239	20	$779	100%	N/A	$0.25	66	69
Utah	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	187	20	$45	100%	N/A	$0.02	0.00	0.00
Utah	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	59	20	$20	100%	N/A	$0.03	0.00	0.00
Utah	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	78	9	$10	100%	N/A	$0.01	138	141
Utah	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	270	4	$1,014	10%	50%	$0.29	23	23
Utah	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	78	9	$10	100%	N/A	$0.01	29	29
Utah	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	269	4	$1,014	10%	50%	$0.29	4	4
Utah	Health	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	10,914	15	$20,368	15%	67%	$0.10	436	436
Utah	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,638	15	$1,172	75%	76%	$0.02	791	791
Utah	Health	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	909	18	$1,608	45%	65%	$0.09	96	96
Utah	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,457	14	$11,524	5.0%	94%	$0.16	91	91
Utah	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,637	12	$5,450	2.5%	75%	$0.17	10	10
Utah	Health	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,638	12	$173	10%	39%	$0.00	50	50
Utah	Health	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,234	25	$3,528	45%	63%	$0.06	423	423
Utah	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	906	25	$1,697	25%	85%	$0.14	66	66
Utah	Health	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	1,091	20	$1,165	45%	60%	$0.06	100	100
Utah	Health	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	654	20	$204	45%	85%	$0.02	84	84
Utah	Health	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,748	25	$6,298	15%	82%	$0.06	361	361
Utah	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	1,628	25	$1,943	15%	90%	$0.09	71	71
Utah	Health	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,618	10%	85%	.	0.00	0.00
Utah	Health	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$15,483	10%	70%	.	0.00	0.00
Utah	Health	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,547	7	$1,320	90%	85%	$0.02	1,130	1,130
Utah	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	5,886	25	$6	15%	90%	$0.00	232	232
Utah	Health	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,048	25	$253	15%	75%	$0.00	162	162
Utah	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,780	15	$1,172	75%	76%	$0.02	125	125
Utah	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,170	14	$11,524	5.0%	94%	$0.21	14	14
Utah	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,251	12	$5,450	2.5%	75%	$0.25	1	1
Utah	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	693	25	$1,697	75%	85%	$0.19	24	24
Utah	Health	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	500	20	$204	45%	85%	$0.02	10	10
Utah	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	1,244	25	$1,943	35%	90%	$0.12	20	20

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	4,499	25	$6	80%	90%	$0.00	201	201
Utah	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	172	10	$23	100%	N/A	$0.01	175	175
Utah	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	172	10	$23	100%	N/A	$0.01	38	38
Utah	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	8,227	10	$821	5.0%	90%	$0.01	801	801
Utah	Health	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	12,341	15	$20,368	15%	67%	$0.13	2,678	2,678
Utah	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	130	18	$297	95%	85%	$0.18	228	228
Utah	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	419	15	$44	95%	76%	$0.01	626	626
Utah	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	10,490	20	$746	55%	45%	$0.01	5,345	5,345
Utah	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	2,159	15	$2,446	8.0%	77%	$0.09	254	254
Utah	Health	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	118	7	$33	65%	25%	$0.02	0.00	0.00
Utah	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	658	18	$1,705	65%	59%	$0.20	549	549
Utah	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	7,048	10	$821	5.0%	90%	$0.01	137	137
Utah	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	130	18	$297	95%	85%	$0.18	44	44
Utah	Health	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	5,025	50	$16,750	24%	98%	$0.26	372	372
Utah	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	359	15	$44	95%	76%	$0.01	107	107
Utah	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	8,986	20	$746	55%	45%	$0.01	685	685
Utah	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	1,850	15	$2,446	8.0%	77%	$0.10	43	43
Utah	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	563	18	$1,705	65%	59%	$0.23	92	92
Utah	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,393	15	$1,853	75%	N/A	$0.03	0.53	8
Utah	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,334	15	$1,108	75%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,393	15	$1,853	75%	N/A	$0.03	0.14	2
Utah	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,334	15	$1,108	75%	N/A	$0.02	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.03	0.24	0.30
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.06	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.04	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.06	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.07	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.04	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	452	10	$1,861	55%	94%	$0.32	2	2
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.21	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.23	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.22	0.02	0.03
Utah	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	116	12	$66	10%	95%	$0.04	0.12	0.14
Utah	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	107	12	$66	10%	94%	$0.05	0.10	0.13
Utah	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,809	25	$4,600	2.5%	100%	$0.20	0.47	0.47
Utah	Health	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	90	12	$146	80%	70%	$0.12	0.53	0.53
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	143	9	$28	95%	25%	$0.01	0.37	0.37
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.02	1	1
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	225	10	$15	95%	73%	$0.01	1	1
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	181	10	$39	95%	62%	$0.02	1	1
Utah	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	226	10	$392	75%	95%	$0.13	1	1
Utah	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,031	10	$173	2.5%	94%	$0.01	0.23	0.23
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.03	0.03	0.03
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.06	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.04	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.06	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.07	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.05	0.00	0.00

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Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.04	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	448	10	$1,861	55%	94%	$0.32	0.39	0.39
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.21	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.05	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.23	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.22	0.00	0.00
Utah	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	116	12	$66	10%	95%	$0.04	0.01	0.01
Utah	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	107	12	$66	10%	94%	$0.05	0.01	0.01
Utah	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,793	25	$3,680	2.5%	100%	$0.16	0.02	0.02
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	142	9	$0.20	95%	25%	$0.00	0.05	0.05
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.02	0.17	0.17
Utah	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	225	10	$15	95%	73%	$0.01	0.26	0.26
Utah	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	224	10	$392	75%	95%	$0.13	0.27	0.27
Utah	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,022	10	$173	2.5%	94%	$0.01	0.03	0.03
Utah	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	4,911	15	$9,520	75%	N/A	$0.15	483	517
Utah	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	294	15	$415	100%	N/A	$0.11	0.00	0.00
Utah	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	4,911	15	$9,520	75%	N/A	$0.15	128	131

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	294	15	$415	100%	N/A	$0.11	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.03	3	3
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.06	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.04	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.06	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.07	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.04	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	462	10	$1,861	75%	94%	$0.31	46	46
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.21	0.00	0.01
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.05	0.04	0.05
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.23	0.00	0.04
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.22	0.33	0.38

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	116	12	$66	10%	95%	$0.04	1	1
Utah	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	107	12	$66	10%	95%	$0.05	1	1
Utah	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,850	25	$4,600	2.5%	100%	$0.19	6	6
Utah	Health	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	92	12	$146	80%	70%	$0.12	7	7
Utah	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	147	9	$28	95%	25%	$0.01	5	5
Utah	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.02	14	14
Utah	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	225	10	$15	95%	73%	$0.01	22	22
Utah	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	181	10	$39	95%	62%	$0.02	15	15
Utah	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	231	10	$392	75%	95%	$0.13	23	23
Utah	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,054	10	$173	2.5%	94%	$0.01	3	3
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.03	0.56	0.56
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.06	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.04	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.06	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.07	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.04	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	449	10	$1,861	75%	94%	$0.32	7	7
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.21	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.05	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.23	0.00	0.00
Utah	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.22	0.05	0.05
Utah	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	116	12	$66	10%	95%	$0.04	0.27	0.27
Utah	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	107	12	$66	10%	95%	$0.05	0.25	0.25
Utah	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,798	25	$3,680	2.5%	100%	$0.16	0.36	0.36
Utah	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	143	9	$0.20	95%	25%	$0.00	0.84	0.84
Utah	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.02	2	2
Utah	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	225	10	$15	95%	73%	$0.01	3	3
Utah	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	224	10	$392	75%	95%	$0.13	3	3
Utah	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,025	10	$173	2.5%	94%	$0.01	0.54	0.54
Utah	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	6,208	4	$709	100%	N/A	$0.01	2,790	3,251
Utah	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	9,578	4	$709	95%	30%	$0.01	7,578	7,578
Utah	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	6,208	4	$709	100%	N/A	$0.01	282	288
Utah	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	9,578	4	$709	95%	30%	$0.01	1,592	1,592
Utah	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	5,930	15	$7,603	75%	94%	$0.10	2,372	2,372

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	741	5	$5,180	95%	81%	$0.54	299	299
Utah	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	4,483	10	$23,917	25%	70%	$0.41	409	409
Utah	Large Office	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	2,965	15	$55,530	45%	45%	$1.44	309	309
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	2,394	20	$1,670	100%	N/A	$0.05	0.00	0.00
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	5,157	20	$3,597	100%	N/A	$0.05	282	391
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	Existing	9,761	20	$13,192	75%	N/A	$0.10	1,651	2,290
Utah	Large Office	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	17,792	15	$92,454	15%	68%	$0.40	919	919
Utah	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	5,930	15	$8,946	80%	98%	$0.12	2,300	2,300
Utah	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	4,744	7	$2,956	10%	94%	$0.05	203	203
Utah	Large Office	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	8,303	15	$264	65%	35%	$0.00	854	854
Utah	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	2,372	13	$2,140	75%	65%	$0.07	506	506
Utah	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	5,930	15	$5,322	75%	76%	$0.07	1,447	1,447
Utah	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	5,930	40	$58,922	2.0%	**%	$3.35	0.00	0.00
Utah	Large Office	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,965	12	$987	10%	39%	$0.03	46	46
Utah	Large Office	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	96	25	$13,461	45%	57%	$10.75	10	10
Utah	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	20	25	$6,475	25%	85%	$24.14	1	1
Utah	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	68%	.	0.00	0.00
Utah	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Utah	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Utah	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	67%	.	0.00	0.00
Utah	Large Office	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (UT State Code)	No Insulation	Per Building	Existing	889	15	$624	65%	45%	$0.05	105	105
Utah	Large Office	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	7,413	7	$5,995	90%	85%	$0.06	2,288	2,288
Utah	Large Office	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	7,693	10	$8,711	35%	68%	$0.09	666	666
Utah	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	9,596	25	$34	15%	90%	$0.00	456	456
Utah	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	8,230	25	$1,441	15%	70%	$0.01	299	299

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Utah	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	3,547	15	$4,055	75%	94%	$0.09	285	285
Utah	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	443	5	$5,180	95%	81%	$0.90	36	36
Utah	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	2,681	10	$21,525	25%	70%	$0.62	49	49
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	1,607	20	$1,503	100%	N/A	$0.07	0.00	0.00
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	3,461	20	$3,237	100%	N/A	$0.07	62	64
Utah	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	New	6,552	20	$11,804	75%	N/A	$0.14	378	387
Utah	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	3,547	15	$8,946	80%	98%	$0.19	279	279
Utah	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	2,838	7	$2,661	10%	94%	$0.07	25	25
Utah	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	1,419	13	$1,926	75%	65%	$0.10	65	65
Utah	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,547	15	$5,322	75%	76%	$0.12	187	187
Utah	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	3,547	40	$58,922	2.0%	**%	$5.61	0.00	0.00
Utah	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	12	25	$6,475	75%	85%	$40.36	0.50	0.50
Utah	Large Office	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,547	15	$30,412	10%	75%	$0.66	22	22
Utah	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	5,740	25	$34	80%	90%	$0.00	313	313
Utah	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	4,798	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	7,464	15	$8,598	100%	N/A	$0.09	0.00	0.00
Utah	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	60,465	15	$-58180.191	25%	N/A	$0.01	563	798
Utah	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	3,209	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	4,992	15	$6,878	100%	N/A	$0.11	0.00	0.00

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Utah	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	40,437	15	$-44342.126	25%	N/A	$0.02	109	114
Utah	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	9,075	15	$7,603	75%	94%	$0.06	3,059	3,059
Utah	Large Office	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	27,225	15	$92,454	15%	68%	$0.26	1,225	1,225
Utah	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	9,075	15	$8,946	35%	98%	$0.08	1,341	1,341
Utah	Large Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	13,612	10	$17,244	10%	20%	$0.10	113	113
Utah	Large Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	9,075	5	$4,866	95%	72%	$0.04	2,584	2,584
Utah	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	22,688	15	$63,359	50%	94%	$0.21	4,123	4,123
Utah	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	9,075	15	$5,322	75%	76%	$0.05	1,757	1,757
Utah	Large Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,268	18	$7,299	45%	65%	$0.25	214	214
Utah	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	9,075	40	$58,922	2.0%	**%	$2.19	57	57
Utah	Large Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,537	12	$987	10%	39%	$0.02	56	56
Utah	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	147	25	$13,461	45%	57%	$7.03	12	12
Utah	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	31	25	$6,475	25%	85%	$15.78	2	2
Utah	Large Office	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	2,722	20	$5,291	45%	61%	$0.15	238	238
Utah	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	1,633	20	$928	45%	85%	$0.04	196	196
Utah	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	68%	.	0.00	0.00
Utah	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Utah	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Utah	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	67%	.	0.00	0.00
Utah	Large Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	11,344	7	$5,995	90%	85%	$0.04	2,725	2,725
Utah	Large Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	7,693	10	$8,711	35%	68%	$0.09	518	518
Utah	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	14,684	25	$34	15%	90%	$0.00	549	549
Utah	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	12,594	25	$1,441	15%	70%	$0.01	360	360
Utah	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	5,914	15	$4,055	75%	94%	$0.05	397	397
Utah	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	5,914	15	$8,946	35%	98%	$0.12	174	174

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	14,785	15	$63,359	50%	94%	$0.33	576	576
Utah	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	5,914	15	$5,322	75%	76%	$0.07	253	253
Utah	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	5,914	40	$58,922	2.0%	**%	$3.36	4	4
Utah	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	20	25	$6,475	75%	85%	$24.21	0.68	0.68
Utah	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	1,064	20	$928	45%	85%	$0.07	21	21
Utah	Large Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	5,914	15	$30,412	10%	75%	$0.40	30	30
Utah	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	9,569	25	$34	80%	90%	$0.00	420	420
Utah	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	174	6	$3	100%	N/A	$0.00	498	498
Utah	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	174	6	$3	100%	N/A	$0.00	100	100
Utah	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	838	4	$946	100%	N/A	$0.09	134	134
Utah	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	838	4	$946	100%	N/A	$0.09	181	181
Utah	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	18	20	$2	100%	N/A	$0.01	0.00	0.00
Utah	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	49	20	$1	100%	N/A	$0.00	0.00	2
Utah	Large Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	340	20	$46	8.8%	100%	$0.01	81	81
Utah	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	18	20	$2	100%	N/A	$0.01	0.00	0.00
Utah	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	49	20	$1	100%	N/A	$0.00	0.00	1
Utah	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	11,792	15	$9,890	100%	N/A	$0.06	0.00	0.00
Utah	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	10,780	15	$7,603	75%	94%	$0.05	1,978	1,978
Utah	Large Office	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	48,455	15	$92,454	15%	68%	$0.15	1,217	1,217
Utah	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	10,780	15	$8,946	35%	98%	$0.06	889	889
Utah	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	16,151	15	$5,322	75%	76%	$0.03	2,156	2,156
Utah	Large Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	4,037	18	$7,299	45%	65%	$0.14	262	262
Utah	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	8,057	14	$27,584	5.0%	94%	$0.26	83	83
Utah	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	10,780	40	$58,922	2.0%	**%	$1.85	47	47

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	48,269	30	$12,668	5.0%	N/A	$0.98	0.00	0.00
Utah	Large Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	12,113	12	$987	10%	39%	$0.01	102	102
Utah	Large Office	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,389	25	$13,461	45%	57%	$0.16	359	359
Utah	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	1,368	25	$6,475	25%	85%	$0.36	62	62
Utah	Large Office	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	4,845	20	$5,291	45%	61%	$0.08	288	288
Utah	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	2,907	20	$928	45%	85%	$0.02	238	238
Utah	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	11,359	25	$24,026	15%	68%	$0.16	248	248
Utah	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	2,237	25	$7,412	15%	90%	$0.25	63	63
Utah	Large Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Utah	Large Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	67%	.	0.00	0.00
Utah	Large Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	20,189	7	$5,995	90%	85%	$0.02	3,266	3,266
Utah	Large Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	7,693	10	$8,711	35%	68%	$0.09	349	349
Utah	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	26,135	25	$34	15%	90%	$0.00	664	664
Utah	Large Office	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	22,414	25	$1,441	15%	70%	$0.00	436	436
Utah	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	6,631	15	$7,912	100%	N/A	$0.09	0.00	0.00
Utah	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	5,470	15	$4,055	75%	94%	$0.06	212	213
Utah	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	5,470	15	$8,946	35%	98%	$0.13	95	95
Utah	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	8,196	15	$5,322	75%	76%	$0.05	239	239
Utah	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,088	14	$27,584	5.0%	94%	$0.52	9	9
Utah	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	5,470	40	$58,922	2.0%	**%	$3.64	2	2
Utah	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	28,105	30	$15,097	5.0%	N/A	$0.86	0.00	0.00
Utah	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	694	25	$6,475	75%	85%	$0.72	15	15
Utah	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	1,475	20	$928	45%	85%	$0.05	19	19
Utah	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	1,135	25	$7,412	35%	90%	$0.50	12	12
Utah	Large Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	8,196	15	$30,412	10%	75%	$0.29	28	28

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	13,262	25	$34	80%	90%	$0.00	392	393
Utah	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	2,848	8	$792	5.0%	95%	$0.02	448	448
Utah	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,361	8	$1,087	75%	70%	$0.02	5,814	5,814
Utah	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,791	15	$3,772	62%	90%	$0.10	5,159	5,159
Utah	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,194	8	$5,563	90%	42%	$0.36	1,148	1,148
Utah	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	61	13	$92	75%	95%	$0.11	145	145
Utah	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	27,705	17	$18,825	5.0%	95%	$0.05	4,358	4,358
Utah	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	2,848	8	$792	5.0%	95%	$0.02	89	89
Utah	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,361	8	$1,087	75%	70%	$0.02	1,166	1,166
Utah	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,791	15	$3,772	62%	90%	$0.10	1,035	1,035
Utah	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,194	8	$5,563	90%	42%	$0.36	230	230
Utah	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	61	13	$92	75%	95%	$0.11	28	28
Utah	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	27,705	17	$18,825	5.0%	95%	$0.05	796	796
Utah	Large Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	2,041	10	$2,531	75%	95%	$0.10	4,009	4,009
Utah	Large Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	5,794	8	$12,789	30%	78%	$0.17	3,683	3,683
Utah	Large Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,345	8	$9,592	30%	78%	$0.17	0.00	0.00
Utah	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,922	13	$1,874	100%	N/A	$0.04	0.00	0.00
Utah	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	5,371	13	$9,091	100%	N/A	$0.13	10,172	10,473
Utah	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	11,913	13	$74,720	25%	N/A	$0.48	7,520	7,742
Utah	Large Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	7,858	8	$5,563	75%	42%	$0.05	6,559	6,559
Utah	Large Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	718	15	$435	100%	N/A	$0.05	0.00	0.00
Utah	Large Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	884	15	$1,813	95%	N/A	$0.16	1,032	1,046

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	788	25	$13,150	50%	N/A	$1.28	32	33
Utah	Large Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	501	17	$8	25%	N/A	$0.00	0.00	0.00
Utah	Large Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	249	15	$8,334	100%	N/A	$2.57	0.00	0.00
Utah	Large Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	287	8	$5,563	75%	42%	$1.49	275	275
Utah	Large Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	712	11	$277	95%	50%	$0.03	1,121	1,121
Utah	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	142	13	$122	95%	98%	$0.07	439	439
Utah	Large Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,833	10	$2,531	75%	95%	$0.11	807	807
Utah	Large Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,555	8	$12,789	30%	78%	$0.22	649	649
Utah	Large Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,416	8	$9,592	30%	78%	$0.22	0.00	0.00
Utah	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	142	13	$122	95%	98%	$0.07	82	82
Utah	Large Office	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	6,418	13	$13,237	100%	N/A	$0.16	4,050	4,068
Utah	Large Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	7,060	8	$5,563	75%	42%	$0.06	1,321	1,321
Utah	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	31,320	4	$470	87%	N/A	$0.00	0.00	0.00
Utah	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	27,387	1	$310	100%	N/A	$0.00	0.00	0.00
Utah	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,949	1	$246	100%	N/A	$0.00	0.00	0.00
Utah	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	31,582	12	$5,819	15%	N/A	$0.01	465	1,694
Utah	Large Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	848	8	$5,563	75%	42%	$0.50	613	613
Utah	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	12	7	$3	10%	90%	$0.02	3	3
Utah	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	269	4	$0.00	75%	45%	$0.00	300	300
Utah	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	158	10	$0.77	95%	75%	$0.00	373	373

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	43	4	$4	5.0%	86%	$0.01	6	6
Utah	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	6,082	4	$1,216	60%	90%	$0.02	10,878	10,878
Utah	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	12	7	$3	10%	90%	$0.02	0.75	0.75
Utah	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	269	4	$0.00	75%	45%	$0.00	60	60
Utah	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	158	10	$0.77	95%	75%	$0.00	74	74
Utah	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	43	4	$4	5.0%	86%	$0.01	1	1
Utah	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	6,082	4	$1,216	60%	90%	$0.02	2,182	2,182
Utah	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	545	6	$594	100%	N/A	$0.08	52	52
Utah	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	545	6	$594	100%	N/A	$0.08	15	15
Utah	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	1,556	6	$181	100%	N/A	$0.01	461	461
Utah	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	1,556	6	$181	100%	N/A	$0.01	0.10	0.10
Utah	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	608	20	$1,656	100%	N/A	$0.21	0.00	0.00
Utah	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	682	20	$2,220	100%	N/A	$0.25	565	685
Utah	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	535	20	$129	100%	N/A	$0.02	0.00	0.00
Utah	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	170	20	$59	100%	N/A	$0.03	0.00	0.00
Utah	Large Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	4,259	20	$426	8.8%	100%	$0.01	919	919
Utah	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	608	20	$1,656	100%	N/A	$0.21	0.00	0.00
Utah	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	682	20	$2,220	100%	N/A	$0.25	290	303
Utah	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	535	20	$129	100%	N/A	$0.02	0.00	0.00
Utah	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	170	20	$59	100%	N/A	$0.03	0.00	0.00
Utah	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	547	9	$72	100%	N/A	$0.01	1,474	1,511
Utah	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	1,882	4	$7,056	10%	50%	$0.29	248	248
Utah	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	547	9	$72	100%	N/A	$0.01	315	316
Utah	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	1,875	4	$7,056	10%	50%	$0.29	48	48
Utah	Large Office	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	23,995	15	$92,454	15%	68%	$0.30	1,353	1,353
Utah	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	7,998	15	$5,322	75%	76%	$0.05	2,453	2,453
Utah	Large Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,999	18	$7,299	45%	65%	$0.28	299	299
Utah	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	11,997	14	$27,584	5.0%	94%	$0.18	285	285
Utah	Large Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	7,998	12	$987	10%	39%	$0.01	155	155

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	9,309	25	$13,461	45%	57%	$0.11	1,198	1,198
Utah	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	1,993	25	$6,475	25%	85%	$0.25	205	205
Utah	Large Office	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	2,399	20	$5,291	45%	61%	$0.17	319	319
Utah	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	1,439	20	$928	45%	85%	$0.05	263	263
Utah	Large Office	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	19,233	25	$24,026	15%	68%	$0.10	938	938
Utah	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	3,580	25	$7,412	15%	90%	$0.16	224	224
Utah	Large Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,174	10%	85%	.	0.00	0.00
Utah	Large Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	67%	.	0.00	0.00
Utah	Large Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	9,998	7	$5,995	90%	85%	$0.05	3,535	3,535
Utah	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	12,942	25	$34	15%	90%	$0.00	727	727
Utah	Large Office	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	11,099	25	$1,441	15%	70%	$0.01	477	477
Utah	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,493	15	$5,322	75%	76%	$0.16	158	158
Utah	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	3,740	14	$27,584	5.0%	94%	$0.57	18	18
Utah	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	621	25	$6,475	75%	85%	$0.80	30	30
Utah	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	448	20	$928	45%	85%	$0.16	12	12
Utah	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	1,116	25	$7,412	35%	90%	$0.51	26	26
Utah	Large Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,493	15	$30,412	10%	75%	$0.94	18	18
Utah	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	4,035	25	$34	80%	90%	$0.00	253	253
Utah	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,043	10	$143	100%	N/A	$0.01	1,617	1,617
Utah	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,043	10	$143	100%	N/A	$0.01	359	359
Utah	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,707	10	$3,728	5.0%	90%	$0.01	2,937	2,937
Utah	Large Office	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	29,560	15	$92,454	15%	68%	$0.24	9,824	9,824
Utah	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,005	15	$201	95%	76%	$0.02	2,301	2,301
Utah	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	25,126	20	$3,386	55%	45%	$0.01	19,647	19,647
Utah	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,173	15	$11,105	11%	77%	$0.16	1,288	1,288
Utah	Large Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	537	7	$152	65%	25%	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	17,656	10	$3,728	5.0%	90%	$0.02	528	528
Utah	Large Office	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	27,371	50	$76,031	17%	98%	$0.21	2,206	2,206
Utah	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	900	15	$201	95%	76%	$0.02	404	404
Utah	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	22,511	20	$3,386	55%	45%	$0.01	2,585	2,585
Utah	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,634	15	$11,105	11%	77%	$0.18	226	226
Utah	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,434	15	$1,531	75%	N/A	$0.02	2	44
Utah	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,354	15	$915	75%	N/A	$0.01	0.00	0.00
Utah	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,978	15	$1,531	75%	N/A	$0.01	0.79	11
Utah	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,892	15	$915	75%	N/A	$0.01	0.00	0.00
Utah	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	623	10	$8,448	55%	80%	$1.04	10	10
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	95%	35%	$0.21	0.00	0.00
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	95%	35%	$0.05	0.01	0.01
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	95%	55%	$0.23	0.00	0.01
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	95%	55%	$0.22	0.10	0.12
Utah	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,494	25	$3,800	2.5%	100%	$0.12	2	2
Utah	Large Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	124	12	$120	80%	30%	$0.07	1	1
Utah	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	198	9	$28	95%	25%	$0.01	1	1
Utah	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	6	6
Utah	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	4	4
Utah	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	311	10	$392	75%	85%	$0.10	7	7

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	663	10	$8,448	55%	80%	$0.98	1	1
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	95%	35%	$0.21	0.00	0.00
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	95%	35%	$0.05	0.00	0.00
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	95%	55%	$0.23	0.00	0.00
Utah	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	95%	55%	$0.22	0.01	0.01
Utah	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,653	25	$3,040	2.5%	100%	$0.09	0.13	0.13
Utah	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	211	9	$0.20	95%	25%	$0.00	0.31	0.31
Utah	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.96	0.96
Utah	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	331	10	$392	75%	85%	$0.09	1	1
Utah	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	6,771	15	$7,864	75%	N/A	$0.09	2,480	2,612
Utah	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	406	15	$343	100%	N/A	$0.06	0.00	0.00
Utah	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,266	15	$7,864	75%	N/A	$0.08	710	721
Utah	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	436	15	$343	100%	N/A	$0.06	0.00	0.00
Utah	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	637	10	$8,448	75%	94%	$1.02	233	233
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	75%	35%	$0.21	0.00	0.05
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	75%	35%	$0.05	0.14	0.16
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	75%	55%	$0.23	0.00	0.14
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	75%	55%	$0.22	1	1
Utah	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,550	25	$3,800	2.5%	100%	$0.11	31	31

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	127	12	$120	80%	30%	$0.07	15	15
Utah	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	202	9	$28	95%	25%	$0.01	25	25
Utah	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	80	80
Utah	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	55	55
Utah	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	318	10	$392	75%	85%	$0.09	105	105
Utah	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	665	10	$8,448	75%	94%	$0.98	42	42
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	75%	35%	$0.21	0.00	0.01
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	75%	35%	$0.05	0.02	0.02
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	75%	55%	$0.23	0.00	0.03
Utah	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	75%	55%	$0.22	0.18	0.18
Utah	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,661	25	$3,040	2.5%	100%	$0.09	1	1
Utah	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	211	9	$0.20	95%	25%	$0.00	4	4
Utah	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	14	14
Utah	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	332	10	$392	75%	85%	$0.09	19	19
Utah	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	1,287	4	$147	100%	N/A	$0.01	305	305
Utah	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	1,287	4	$147	100%	N/A	$0.01	31	31
Utah	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	5,746	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	8,939	15	$14,842	100%	N/A	$0.13	0.00	0.00
Utah	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	72,409	15	$-100434.36	25%	N/A	$0.02	613	869
Utah	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	4,253	15	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	6,616	15	$11,874	100%	N/A	$0.14	0.00	0.00
Utah	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	53,592	15	$-76546.21	25%	N/A	$0.02	134	139
Utah	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	10,867	15	$8,750	25%	94%	$0.06	1,110	1,110
Utah	Large Retail	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	32,603	15	$6,400	15%	68%	$0.25	1,401	1,401
Utah	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	10,867	15	$8,902	80%	98%	$0.06	3,507	3,507
Utah	Large Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	16,301	10	$29,768	10%	80%	$0.14	494	494
Utah	Large Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	10,867	5	$8,400	95%	72%	$0.06	2,795	2,795
Utah	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	27,169	15	$72,916	50%	94%	$0.21	4,459	4,459
Utah	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	10,867	15	$6,125	75%	76%	$0.04	1,901	1,901
Utah	Large Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,716	18	$8,400	45%	65%	$0.24	231	231
Utah	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	10,867	40	$57,651	2.0%	**%	$1.82	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	5,433	12	$979	10%	39%	$0.01	60	60
Utah	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	419	25	$13,395	45%	69%	$2.45	37	37
Utah	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	37	25	$6,443	25%	85%	$13.11	2	2
Utah	Large Retail	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	3,260	20	$6,089	45%	61%	$0.14	258	258
Utah	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	1,956	20	$1,068	45%	85%	$0.04	213	213
Utah	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$23,908	15%	82%	.	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$7,376	15%	90%	.	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	67%	.	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	13,584	7	$6,900	90%	85%	$0.04	2,951	2,951
Utah	Large Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	7,242	10	$8,641	35%	68%	$0.09	441	441
Utah	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	17,585	25	$34	15%	90%	$0.00	598	598
Utah	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	15,081	25	$1,429	15%	70%	$0.01	392	392

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	7,838	15	$4,666	25%	94%	$0.05	159	159
Utah	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	7,838	15	$8,902	80%	98%	$0.09	504	504
Utah	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	19,595	15	$72,916	50%	94%	$0.29	696	696
Utah	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,838	15	$6,125	75%	76%	$0.06	306	306
Utah	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	7,838	40	$57,651	2.0%	**%	$2.53	0.00	0.00
Utah	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	27	25	$6,443	75%	85%	$18.18	0.82	0.82
Utah	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	1,410	20	$1,068	45%	85%	$0.06	25	25
Utah	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	12,682	25	$34	80%	90%	$0.00	512	512
Utah	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	248	6	$5	100%	N/A	$0.00	312	312
Utah	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	248	6	$5	100%	N/A	$0.00	63	63
Utah	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	173	4	$196	100%	N/A	$0.09	12	12
Utah	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	173	4	$196	100%	N/A	$0.09	16	16
Utah	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	16	20	$2	100%	N/A	$0.01	0.00	0.00
Utah	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	44	20	$1	100%	N/A	$0.00	0.00	0.94
Utah	Large Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	308	20	$42	8.8%	100%	$0.01	32	32
Utah	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	16	20	$2	100%	N/A	$0.01	0.00	0.00
Utah	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	44	20	$1	100%	N/A	$0.00	0.00	0.71
Utah	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	14,918	15	$17,074	100%	N/A	$0.09	664	823
Utah	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	13,774	15	$8,750	25%	94%	$0.05	283	283
Utah	Large Retail	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	67,724	15	$6,400	15%	68%	$0.12	591	591
Utah	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	13,774	15	$8,902	80%	98%	$0.05	903	903
Utah	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	22,574	15	$6,125	75%	76%	$0.02	1,021	1,021
Utah	Large Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,643	18	$8,400	45%	65%	$0.11	124	124
Utah	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	13,201	14	$31,745	5.0%	94%	$0.18	46	46

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	13,774	40	$57,651	2.0%	**%	$1.44	0.00	0.00
Utah	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	60,523	30	$57,626	5.0%	N/A	$1.34	73	103
Utah	Large Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	16,931	12	$979	10%	39%	$0.00	48	48
Utah	Large Retail	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	17,639	25	$13,395	45%	69%	$0.06	403	403
Utah	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2,228	25	$6,443	25%	85%	$0.22	34	34
Utah	Large Retail	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	6,772	20	$6,089	45%	61%	$0.07	134	134
Utah	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	4,063	20	$1,068	45%	85%	$0.02	111	111
Utah	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	20,192	25	$23,908	15%	82%	$0.09	176	176
Utah	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	3,961	25	$7,376	15%	90%	$0.14	37	37
Utah	Large Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Utah	Large Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	67%	.	0.00	0.00
Utah	Large Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	28,218	7	$6,900	90%	85%	$0.02	1,519	1,519
Utah	Large Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	7,242	10	$8,641	35%	68%	$0.09	109	109
Utah	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	36,527	25	$34	15%	90%	$0.00	310	310
Utah	Large Retail	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	31,328	25	$1,429	15%	70%	$0.00	203	203
Utah	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	9,658	15	$13,659	100%	N/A	$0.11	116	119
Utah	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	8,091	15	$4,666	25%	94%	$0.04	34	34
Utah	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	8,091	15	$8,902	80%	98%	$0.08	109	109
Utah	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	13,261	15	$6,125	75%	76%	$0.04	127	127
Utah	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	7,755	14	$31,745	5.0%	94%	$0.31	5	5
Utah	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	8,091	40	$57,651	2.0%	**%	$2.45	0.00	0.00
Utah	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	40,232	30	$43,941	5.0%	N/A	$1.04	19	19
Utah	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	1,309	25	$6,443	75%	85%	$0.38	9	9
Utah	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	2,387	20	$1,068	45%	85%	$0.03	10	10
Utah	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	2,327	25	$7,376	35%	90%	$0.24	8	8
Utah	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	21,458	25	$34	80%	90%	$0.00	209	210

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	3,278	8	$912	5.0%	95%	$0.02	227	227
Utah	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	8,419	8	$1,084	75%	70%	$0.01	6,461	6,461
Utah	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	6,993	15	$9,449	62%	90%	$0.10	5,706	5,706
Utah	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,535	8	$6,402	45%	56%	$0.14	1,015	1,015
Utah	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	118	13	$176	75%	95%	$0.11	123	123
Utah	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	31,885	17	$21,665	5.0%	95%	$0.05	2,214	2,214
Utah	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	3,278	8	$912	5.0%	95%	$0.02	45	45
Utah	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	8,419	8	$1,084	75%	70%	$0.01	1,296	1,296
Utah	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	6,993	15	$9,449	62%	90%	$0.10	1,144	1,144
Utah	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,535	8	$6,402	45%	56%	$0.14	203	203
Utah	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	118	13	$176	75%	95%	$0.11	24	24
Utah	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	31,885	17	$21,665	5.0%	95%	$0.05	404	404
Utah	Large Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	4,076	10	$2,913	5.0%	95%	$0.05	230	230
Utah	Large Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	10,774	8	$12,758	5.0%	84%	$0.09	538	538
Utah	Large Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	8,080	8	$9,568	5.0%	84%	$0.09	402	402
Utah	Large Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	846	6	$314	10%	80%	$0.03	80	80
Utah	Large Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	634	6	$322	5.0%	80%	$0.04	30	30
Utah	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	15,487	13	$14,850	100%	N/A	$0.07	13,189	13,247
Utah	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	10,855	13	$5,283	100%	N/A	$0.04	0.00	0.00
Utah	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	25,838	13	$31,908	25%	N/A	$0.39	7,031	7,061
Utah	Large Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	18,549	8	$6,402	5.0%	56%	$0.03	614	614
Utah	Large Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,284	15	$2,425	100%	N/A	$0.03	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	7,718	15	$10,198	95%	N/A	$0.10	4,048	4,054
Utah	Large Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,895	16	$74,079	50%	N/A	$0.83	155	155
Utah	Large Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	4,390	11	$18	25%	N/A	$0.00	0.00	0.00
Utah	Large Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,183	15	$46,943	100%	N/A	$1.65	0.00	0.00
Utah	Large Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,922	8	$6,402	5.0%	56%	$0.17	112	112
Utah	Large Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	3,078	11	$1,198	95%	50%	$0.03	2,138	2,138
Utah	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	615	13	$527	95%	98%	$0.07	838	838
Utah	Large Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	4,906	10	$2,913	5.0%	95%	$0.05	59	59
Utah	Large Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	9,034	8	$12,758	5.0%	84%	$0.11	96	96
Utah	Large Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	6,775	8	$9,568	5.0%	84%	$0.11	72	72
Utah	Large Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	654	6	$160	10%	80%	$0.02	13	13
Utah	Large Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	361	6	$140	10%	80%	$0.03	7	7
Utah	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	615	13	$527	95%	98%	$0.07	146	146
Utah	Large Retail	Lighting Interior Other	Lighting Package, High Efficiency	13% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	31,893	13	$74,347	100%	N/A	$0.18	9,275	9,282
Utah	Large Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	22,325	8	$6,402	5.0%	56%	$0.02	158	158
Utah	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	73,745	4	$701	85%	N/A	$0.00	0.00	16,688
Utah	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	64,549	1	$464	100%	N/A	$0.00	0.00	0.00
Utah	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,218	1	$353	100%	N/A	$0.00	0.00	0.00
Utah	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	74,349	12	$8,740	15%	N/A	$0.01	1,021	8,949

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Utah	Large Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	5,667	8	$6,402	5.0%	56%	$0.09	66	66
Utah	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	15	7	$4	10%	90%	$0.02	2	2
Utah	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	382	4	$0.00	10%	45%	$0.00	25	25
Utah	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	42	10	$0.20	95%	75%	$0.00	43	43
Utah	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	54	4	$5	5.0%	86%	$0.01	3	3
Utah	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	700	4	$140	60%	90%	$0.02	552	552
Utah	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	15	7	$4	10%	90%	$0.02	0.41	0.41
Utah	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	382	4	$0.00	10%	45%	$0.00	5	5
Utah	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	42	10	$0.20	95%	75%	$0.00	8	8
Utah	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	54	4	$5	5.0%	86%	$0.01	0.68	0.68
Utah	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	700	4	$140	60%	90%	$0.02	110	110
Utah	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	775	6	$844	100%	N/A	$0.08	33	33
Utah	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	775	6	$844	100%	N/A	$0.08	10	10
Utah	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	495	6	$57	100%	N/A	$0.01	64	64
Utah	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	495	6	$57	100%	N/A	$0.01	0.01	0.01
Utah	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	552	20	$1,502	100%	N/A	$0.21	0.00	0.00
Utah	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	619	20	$2,014	100%	N/A	$0.25	226	274
Utah	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	485	20	$117	100%	N/A	$0.02	0.00	0.00
Utah	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	154	20	$53	100%	N/A	$0.03	0.00	0.00
Utah	Large Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	3,863	20	$387	8.8%	100%	$0.01	368	368
Utah	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	552	20	$1,502	100%	N/A	$0.21	0.00	0.00
Utah	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	619	20	$2,014	100%	N/A	$0.25	116	121
Utah	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	485	20	$117	100%	N/A	$0.02	0.00	0.00
Utah	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	154	20	$53	100%	N/A	$0.03	0.00	0.00
Utah	Large Retail	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	33,705	15	$6,400	15%	68%	$0.24	389	389
Utah	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	11,235	15	$6,125	75%	76%	$0.04	706	706
Utah	Large Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,808	18	$8,400	45%	65%	$0.23	86	86

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Utah	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	16,852	14	$31,745	5.0%	94%	$0.14	82	82
Utah	Large Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	11,235	12	$979	10%	39%	$0.01	44	44
Utah	Large Retail	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	22,104	25	$13,395	45%	69%	$0.05	700	700
Utah	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2,800	25	$6,443	25%	85%	$0.18	57	57
Utah	Large Retail	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	3,370	20	$6,089	45%	61%	$0.14	88	88
Utah	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	2,022	20	$1,068	45%	85%	$0.04	73	73
Utah	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	27,016	25	$23,908	15%	82%	$0.07	313	313
Utah	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	5,028	25	$7,376	15%	90%	$0.11	62	62
Utah	Large Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$6,144	10%	85%	.	0.00	0.00
Utah	Large Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	67%	.	0.00	0.00
Utah	Large Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	14,043	7	$6,900	90%	85%	$0.04	980	980
Utah	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	18,179	25	$34	15%	90%	$0.00	201	201
Utah	Large Retail	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	15,591	25	$1,429	15%	70%	$0.01	132	132
Utah	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	5,110	15	$6,125	75%	76%	$0.09	66	66
Utah	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	7,665	14	$31,745	5.0%	94%	$0.32	7	7
Utah	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	1,273	25	$6,443	75%	85%	$0.39	12	12
Utah	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	919	20	$1,068	45%	85%	$0.09	5	5
Utah	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	2,287	25	$7,376	35%	90%	$0.25	11	11
Utah	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	8,268	25	$34	80%	90%	$0.00	107	107
Utah	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	2,618	10	$359	100%	N/A	$0.01	1,792	1,792
Utah	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	2,618	10	$359	100%	N/A	$0.01	398	398
Utah	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	20,300	10	$4,291	5.0%	90%	$0.02	1,335	1,335
Utah	Large Retail	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	30,450	15	$6,400	15%	68%	$0.27	4,468	4,468
Utah	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	466	18	$1,125	95%	65%	$0.19	421	421
Utah	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,035	15	$231	95%	76%	$0.02	1,043	1,043
Utah	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	25,882	20	$3,897	55%	45%	$0.01	8,909	8,909

Table C-2.2. Commercial Measure Details

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Utah	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,328	15	$12,780	5.0%	77%	$0.18	265	265
Utah	Large Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	618	7	$175	65%	25%	$0.02	0.00	0.00
Utah	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	16,030	10	$4,291	5.0%	90%	$0.02	211	211
Utah	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	466	18	$1,125	95%	65%	$0.19	82	82
Utah	Large Retail	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	26,250	50	$87,500	8.0%	98%	$0.26	438	438
Utah	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	817	15	$231	95%	76%	$0.02	166	166
Utah	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	20,438	20	$3,897	55%	45%	$0.01	1,060	1,060
Utah	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,207	15	$12,780	5.0%	77%	$0.23	42	42
Utah	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,425	15	$1,450	75%	N/A	$0.02	1	20
Utah	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,367	15	$867	75%	N/A	$0.01	0.00	0.00
Utah	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,425	15	$1,450	75%	N/A	$0.02	0.34	4
Utah	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,367	15	$867	75%	N/A	$0.01	0.00	0.00
Utah	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	455	10	$9,723	75%	94%	$1.64	8	8
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.21	0.00	0.01
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.05	0.02	0.02
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.23	0.00	0.02
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.22	0.18	0.22
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$12	20%	95%	$0.04	0.10	0.13
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	20	12	$12	20%	94%	$0.05	0.09	0.12

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Utah	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,820	25	$3,600	2.5%	100%	$0.15	1	1
Utah	Large Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	91	12	$114	80%	90%	$0.10	1	1
Utah	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	144	9	$28	95%	25%	$0.01	0.86	0.86
Utah	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.02	0.34	0.34
Utah	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	227	10	$392	75%	95%	$0.13	4	4
Utah	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	451	10	$9,723	75%	94%	$1.66	1	1
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.21	0.00	0.00
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.05	0.00	0.00
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.23	0.00	0.00
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.22	0.02	0.02
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	22	12	$12	20%	95%	$0.04	0.01	0.01
Utah	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	20	12	$12	20%	94%	$0.05	0.01	0.01
Utah	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,804	25	$2,880	2.5%	100%	$0.12	0.05	0.05
Utah	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	143	9	$0.20	95%	25%	$0.00	0.13	0.13
Utah	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.02	0.05	0.05
Utah	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	225	10	$392	75%	95%	$0.13	0.63	0.63
Utah	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	4,941	15	$7,450	75%	N/A	$0.12	1,189	1,230
Utah	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	296	15	$325	100%	N/A	$0.08	0.00	0.00
Utah	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	4,941	15	$7,450	75%	N/A	$0.12	318	322
Utah	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	296	15	$325	100%	N/A	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	465	10	$9,723	25%	94%	$1.61	36	36
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.21	0.00	0.11
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.05	0.31	0.36
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.23	0.00	0.32
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.22	2	2
Utah	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$12	0.0%	95%	$0.04	0.00	0.00
Utah	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	20	12	$12	0.0%	95%	$0.05	0.00	0.00
Utah	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,861	25	$3,600	2.5%	100%	$0.15	15	15
Utah	Large Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	93	12	$114	80%	90%	$0.09	21	21
Utah	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	148	9	$28	95%	25%	$0.01	11	11
Utah	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.02	4	4
Utah	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	232	10	$392	75%	95%	$0.13	54	54
Utah	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	452	10	$9,723	25%	94%	$1.65	6	6
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.21	0.00	0.02
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.05	0.05	0.05
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.23	0.00	0.06
Utah	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.22	0.39	0.39
Utah	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	22	12	$12	0.0%	95%	$0.04	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	20	12	$12	0.0%	95%	$0.05	0.00	0.00
Utah	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,809	25	$2,880	2.5%	100%	$0.12	0.87	0.87
Utah	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	143	9	$0.20	95%	25%	$0.00	1	1
Utah	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.02	0.78	0.78
Utah	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	226	10	$392	75%	95%	$0.13	9	9
Utah	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	655	4	$74	100%	N/A	$0.01	257	257
Utah	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	655	4	$74	100%	N/A	$0.01	26	26
Utah	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	151	12	$25	90%	90%	$0.01	5	5
Utah	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	13	12	$35	55%	90%	$0.20	0.29	0.29
Utah	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	65	12	$15	95%	85%	$0.02	2	2
Utah	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	113	12	$64	19%	55%	$0.04	0.00	0.00
Utah	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	184	12	$118	55%	21%	$0.05	0.94	0.94
Utah	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	319	12	$179	11%	75%	$0.04	1	1
Utah	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	151	12	$25	90%	90%	$0.01	1	1
Utah	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	13	12	$35	55%	90%	$0.20	0.05	0.05
Utah	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	65	12	$15	95%	85%	$0.02	0.45	0.45
Utah	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	113	12	$64	19%	55%	$0.04	0.00	0.00
Utah	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	184	12	$118	55%	21%	$0.05	0.18	0.18
Utah	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	319	12	$179	11%	75%	$0.04	0.22	0.22
Utah	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	322	15	$2,025	50%	94%	$0.48	41	41
Utah	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	201	5	$1,379	95%	81%	$0.53	42	42
Utah	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,217	10	$6,370	25%	70%	$0.40	57	57
Utah	Lodging	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	805	15	$14,790	45%	30%	$1.41	29	29

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Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	3,377	20	$4,744	100%	N/A	$0.11	468	589
Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,125	20	$1,581	100%	N/A	$0.11	0.00	0.00
Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,511	20	$3,527	100%	N/A	$0.11	0.00	0.00
Utah	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,610	15	$2,835	45%	98%	$0.14	188	188
Utah	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,288	7	$787	10%	94%	$0.05	30	30
Utah	Lodging	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	2,254	15	$70	65%	35%	$0.00	129	129
Utah	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	644	13	$570	75%	65%	$0.07	76	76
Utah	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,610	15	$1,417	75%	76%	$0.06	218	218
Utah	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	724	12	$5,450	10%	75%	$0.48	12	12
Utah	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,610	40	$82,053	2.0%	**%	$3.92	0.00	0.00
Utah	Lodging	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	805	12	$432	10%	39%	$0.03	7	7
Utah	Lodging	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	26	25	$4,266	45%	65%	$0.84	1	1
Utah	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	5	25	$2,052	25%	85%	$1.90	0.26	0.26
Utah	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,614	15%	78%	.	0.00	0.00
Utah	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,349	15%	90%	.	0.00	0.00
Utah	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,956	10%	85%	.	0.00	0.00
Utah	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,718	10%	70%	.	0.00	0.00
Utah	Lodging	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (UT State Code)	No Insulation	Per Building	Existing	241	15	$166	65%	45%	$0.05	15	15
Utah	Lodging	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,012	7	$1,596	90%	85%	$0.05	344	344
Utah	Lodging	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	3,126	10	$3,811	35%	68%	$0.09	149	149
Utah	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,605	25	$15	15%	90%	$0.00	67	67
Utah	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,234	25	$630	15%	71%	$0.02	44	44
Utah	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	178	15	$1,080	50%	94%	$0.47	4	4
Utah	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	111	5	$1,379	95%	81%	$0.95	4	4

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Utah	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	674	10	$5,733	25%	70%	$0.65	6	6
Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	2,258	20	$4,269	100%	N/A	$0.15	102	104
Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	752	20	$1,423	100%	N/A	$0.15	0.00	0.00
Utah	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,679	20	$3,174	100%	N/A	$0.15	0.00	0.00
Utah	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	891	15	$2,835	45%	98%	$0.24	20	20
Utah	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	713	7	$708	10%	94%	$0.08	3	3
Utah	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	356	13	$513	75%	65%	$0.11	8	8
Utah	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	891	15	$1,417	75%	76%	$0.10	25	25
Utah	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	401	12	$5,450	10%	75%	$0.87	1	1
Utah	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	891	40	$82,053	2.0%	**%	$7.07	0.00	0.00
Utah	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	3	25	$2,052	75%	85%	$3.29	0.06	0.06
Utah	Lodging	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	891	15	$8,100	10%	75%	$0.58	3	3
Utah	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,442	25	$15	80%	90%	$0.00	41	41
Utah	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	482	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,232	15	$735	100%	N/A	$0.05	0.00	0.00
Utah	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	10,208	15	$-15394.405	25%	N/A	$0.02	121	179
Utah	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	321	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	820	15	$588	100%	N/A	$0.06	0.00	0.00
Utah	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	6,796	15	$-11223.199	25%	N/A	$0.03	22	24
Utah	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	356	15	$2,025	50%	94%	$0.44	104	104
Utah	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,780	15	$2,835	45%	98%	$0.12	486	486

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Utah	Lodging	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,670	10	$4,592	10%	30%	$0.13	47	47
Utah	Lodging	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,780	5	$1,296	95%	72%	$0.06	720	720
Utah	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	4,450	15	$16,875	50%	94%	$0.29	1,149	1,149
Utah	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,780	15	$1,417	75%	76%	$0.05	490	490
Utah	Lodging	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	445	18	$1,944	45%	65%	$0.29	59	59
Utah	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	801	12	$5,450	10%	75%	$0.44	27	27
Utah	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,780	40	$82,053	2.0%	**%	$3.54	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	4,002	15	$3,140	60%	97%	$0.06	1,048	1,048
Utah	Lodging	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	890	12	$432	10%	39%	$0.03	13	13
Utah	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	28	25	$4,266	45%	65%	$0.84	3	3
Utah	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	6	25	$2,052	25%	85%	$1.88	0.51	0.51
Utah	Lodging	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	534	20	$1,409	45%	56%	$0.17	53	53
Utah	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	320	20	$247	45%	85%	$0.05	47	47
Utah	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,614	15%	78%	.	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,349	15%	90%	.	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,956	10%	85%	.	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,718	10%	70%	.	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,225	7	$1,596	90%	85%	$0.05	660	660
Utah	Lodging	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	3,126	10	$3,811	35%	68%	$0.09	260	260
Utah	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,880	25	$15	15%	90%	$0.00	130	130
Utah	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,470	25	$630	15%	71%	$0.02	86	86
Utah	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	218	15	$1,080	50%	94%	$0.38	13	13
Utah	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,093	15	$2,835	45%	98%	$0.20	60	60
Utah	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,733	15	$16,875	50%	94%	$0.47	153	153
Utah	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,093	15	$1,417	75%	76%	$0.09	67	67

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	492	12	$5,450	10%	75%	$0.73	3	3
Utah	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,093	40	$82,053	2.0%	**%	$5.77	0.00	0.00
Utah	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,458	15	$3,140	60%	97%	$0.10	141	141
Utah	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	3	25	$2,052	75%	85%	$3.24	0.15	0.15
Utah	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	196	20	$247	45%	85%	$0.08	4	4
Utah	Lodging	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,093	15	$8,100	10%	75%	$0.49	7	7
Utah	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,769	25	$15	80%	90%	$0.00	97	97
Utah	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,995	15	$2,835	45%	98%	$0.11	451	451
Utah	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,995	15	$1,417	75%	76%	$0.05	555	555
Utah	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	897	12	$5,450	10%	75%	$0.40	31	31
Utah	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,995	40	$82,053	2.0%	**%	$3.16	0.00	0.00
Utah	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	4,486	15	$3,140	60%	97%	$0.05	1,197	1,197
Utah	Lodging	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	997	12	$432	10%	39%	$0.03	15	15
Utah	Lodging	Cooling Room	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	32	25	$4,266	45%	65%	$0.83	3	3
Utah	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	6	25	$2,052	25%	85%	$1.87	0.58	0.58
Utah	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,614	15%	78%	.	0.00	0.00
Utah	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,349	15%	90%	.	0.00	0.00
Utah	Lodging	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,956	10%	85%	.	0.00	0.00
Utah	Lodging	Cooling Room	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,718	10%	70%	.	0.00	0.00
Utah	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,754	9	$1,069	50%	N/A	$0.05	287	356
Utah	Lodging	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	3,126	10	$3,811	35%	68%	$0.09	297	297
Utah	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	3,228	25	$15	15%	90%	$0.00	167	167
Utah	Lodging	Cooling Room	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,768	25	$630	15%	71%	$0.02	111	111
Utah	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,272	15	$2,835	45%	98%	$0.17	55	55
Utah	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,272	15	$1,417	75%	76%	$0.08	71	71

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	572	12	$5,450	10%	75%	$0.64	3	3
Utah	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,272	40	$82,053	2.0%	**%	$4.96	0.00	0.00
Utah	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,860	15	$3,140	60%	97%	$0.08	148	148
Utah	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	4	25	$2,052	75%	85%	$3.20	0.16	0.16
Utah	Lodging	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,272	15	$8,100	10%	75%	$0.43	7	7
Utah	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	1,121	9	$855	50%	N/A	$0.06	34	35
Utah	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,058	25	$15	80%	90%	$0.00	103	103
Utah	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	20	6	$0.43	100%	N/A	$0.00	41	41
Utah	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	20	6	$0.43	100%	N/A	$0.00	8	8
Utah	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	88	4	$99	100%	N/A	$0.09	10	10
Utah	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	88	4	$99	100%	N/A	$0.09	13	13
Utah	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	24	20	$0.63	100%	N/A	$0.00	0.00	0.84
Utah	Lodging	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	165	20	$22	8.8%	100%	$0.01	28	28
Utah	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	24	20	$0.63	100%	N/A	$0.00	0.00	0.64
Utah	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,354	15	$2,736	100%	N/A	$0.16	0.00	0.00
Utah	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,906	15	$5,472	100%	N/A	$0.11	603	785
Utah	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	395	15	$2,025	50%	94%	$0.39	58	58
Utah	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,978	15	$2,835	45%	98%	$0.11	273	273
Utah	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,964	15	$1,417	75%	76%	$0.03	689	689
Utah	Lodging	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	991	18	$1,944	45%	65%	$0.15	84	84
Utah	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,978	14	$13,932	5.0%	94%	$0.36	40	40

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,783	12	$5,450	10%	75%	$0.23	38	38
Utah	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,978	40	$82,053	2.0%	**%	$3.19	0.00	0.00
Utah	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	9,267	30	$62,236	5.0%	N/A	$1.35	46	71
Utah	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	8,912	15	$3,140	60%	97%	$0.03	1,470	1,470
Utah	Lodging	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,973	12	$432	10%	39%	$0.01	28	28
Utah	Lodging	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,329	25	$4,266	45%	65%	$0.14	168	168
Utah	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	498	25	$2,052	25%	85%	$0.32	25	25
Utah	Lodging	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	1,189	20	$1,409	45%	56%	$0.09	72	72
Utah	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	713	20	$247	45%	85%	$0.03	65	65
Utah	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,894	25	$7,614	15%	78%	$0.08	192	192
Utah	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	979	25	$2,349	15%	90%	$0.18	30	30
Utah	Lodging	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,956	10%	85%	.	0.00	0.00
Utah	Lodging	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,718	10%	70%	.	0.00	0.00
Utah	Lodging	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,955	7	$1,596	90%	85%	$0.02	885	885
Utah	Lodging	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	3,126	10	$3,811	35%	68%	$0.09	156	156
Utah	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	6,414	25	$15	15%	90%	$0.00	178	178
Utah	Lodging	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,501	25	$630	15%	71%	$0.01	119	119
Utah	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	865	15	$2,189	100%	N/A	$0.19	0.00	0.00
Utah	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	2,465	15	$4,378	100%	N/A	$0.14	102	106
Utah	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	231	15	$1,080	50%	94%	$0.36	7	7
Utah	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,159	15	$2,835	45%	98%	$0.19	32	32
Utah	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,323	15	$1,417	75%	76%	$0.05	83	83
Utah	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,745	14	$13,932	5.0%	94%	$0.61	4	4
Utah	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,045	12	$5,450	10%	75%	$0.40	4	4

Table C-2.2. Commercial Measure Details

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Utah	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,159	40	$82,053	2.0%	**%	$5.44	0.00	0.00
Utah	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	5,940	30	$83,337	5.0%	N/A	$1.08	11	11
Utah	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	5,224	15	$3,140	60%	97%	$0.05	173	173
Utah	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	292	25	$2,052	75%	85%	$0.54	7	7
Utah	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	418	20	$247	45%	85%	$0.05	6	6
Utah	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	574	25	$2,349	35%	90%	$0.31	6	6
Utah	Lodging	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,323	15	$8,100	10%	75%	$0.27	8	8
Utah	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	3,759	25	$15	80%	90%	$0.00	117	118
Utah	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	758	8	$211	5.0%	95%	$0.02	87	87
Utah	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,158	8	$612	75%	70%	$0.04	1,469	1,469
Utah	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	962	15	$1,300	62%	90%	$0.10	1,300	1,300
Utah	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	841	8	$1,481	90%	59%	$0.14	850	850
Utah	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	71	13	$105	75%	95%	$0.11	122	122
Utah	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	7,379	17	$5,013	5.0%	95%	$0.05	849	849
Utah	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	758	8	$211	5.0%	95%	$0.02	17	17
Utah	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,158	8	$612	75%	70%	$0.04	294	294
Utah	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	962	15	$1,300	62%	90%	$0.10	261	261
Utah	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	841	8	$1,481	90%	59%	$0.14	170	170
Utah	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	71	13	$105	75%	95%	$0.11	23	23
Utah	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	7,379	17	$5,013	5.0%	95%	$0.05	155	155
Utah	Lodging	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	187	10	$674	25%	95%	$0.28	89	89
Utah	Lodging	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,043	8	$7,200	5.0%	92%	$0.53	95	95
Utah	Lodging	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	782	8	$5,400	5.0%	92%	$0.53	70	70
Utah	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	434	13	$680	100%	N/A	$0.12	574	580

Table C-2.2. Commercial Measure Details

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Utah	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	360	13	$-69.628624	100%	N/A	$0.00	0.00	0.00
Utah	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	945	13	$7,968	25%	N/A	$0.65	376	380
Utah	Lodging	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,478	8	$1,481	5.0%	59%	$0.08	86	86
Utah	Lodging	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	59	15	$39	100%	N/A	$0.05	0.00	0.00
Utah	Lodging	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	73	15	$173	95%	N/A	$0.18	60	60
Utah	Lodging	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	65	29	$1,275	50%	N/A	$1.50	2	2
Utah	Lodging	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	41	20	$-1.7276729	25%	N/A	$0.00	0.00	0.00
Utah	Lodging	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$807	100%	N/A	$2.96	0.00	0.00
Utah	Lodging	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	47	8	$1,481	5.0%	59%	$2.42	3	3
Utah	Lodging	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	180	11	$70	95%	50%	$0.03	208	208
Utah	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	36	13	$30	95%	98%	$0.07	81	81
Utah	Lodging	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	413	10	$674	25%	95%	$0.13	40	40
Utah	Lodging	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	782	8	$7,200	5.0%	92%	$0.71	14	14
Utah	Lodging	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	586	8	$5,400	5.0%	92%	$0.71	11	11
Utah	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	36	13	$30	95%	98%	$0.07	13	13
Utah	Lodging	Lighting Interior Other	Lighting Package, High Efficiency	15% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,099	13	$7,637	100%	N/A	$0.19	1,485	1,487
Utah	Lodging	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,254	8	$1,481	5.0%	59%	$0.03	39	39
Utah	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	49,629	4	$877	85%	N/A	$0.00	0.00	1,567
Utah	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	43,406	1	$580	100%	N/A	$0.00	0.00	0.00

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Utah	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,291	1	$456	100%	N/A	$0.00	0.00	0.00
Utah	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	50,043	12	$10,870	15%	N/A	$0.02	926	4,754
Utah	Lodging	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	4,028	8	$1,481	5.0%	59%	$0.03	138	138
Utah	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.79	10%	90%	$0.02	0.63	0.63
Utah	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	30	4	$0.00	25%	45%	$0.00	8	8
Utah	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	10	10	$0.05	95%	75%	$0.00	17	17
Utah	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.05	1,468	1,468
Utah	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$1	5.0%	86%	$0.01	1	1
Utah	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	202	4	$40	60%	90%	$0.02	264	264
Utah	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.79	10%	90%	$0.02	0.12	0.12
Utah	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	30	4	$0.00	25%	45%	$0.00	1	1
Utah	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	10	10	$0.05	95%	75%	$0.00	3	3
Utah	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.05	294	294
Utah	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$1	5.0%	86%	$0.01	0.20	0.20
Utah	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	202	4	$40	60%	90%	$0.02	53	53
Utah	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	62	6	$68	100%	N/A	$0.08	4	4
Utah	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	62	6	$68	100%	N/A	$0.08	1	1
Utah	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	68	6	$7	100%	N/A	$0.01	14	14
Utah	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	68	6	$7	100%	N/A	$0.01	0.00	0.00
Utah	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	719	10	$596	5.0%	80%	$0.06	7	7
Utah	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	976	10	$809	5.0%	80%	$0.06	10	10
Utah	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	20	10	$3	1.0%	85%	$0.01	0.04	0.04
Utah	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	31	15	$28	0.0%	95%	$0.07	0.00	0.00
Utah	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	719	10	$596	5.0%	80%	$0.06	1	1

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Utah	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	976	10	$809	5.0%	80%	$0.06	2	2
Utah	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	20	10	$3	1.0%	85%	$0.01	0.00	0.00
Utah	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	31	15	$28	0.0%	95%	$0.07	0.00	0.00
Utah	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	296	20	$806	100%	N/A	$0.21	0.00	0.00
Utah	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	332	20	$1,082	100%	N/A	$0.25	201	244
Utah	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	260	20	$63	100%	N/A	$0.02	0.00	0.00
Utah	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	82	20	$28	100%	N/A	$0.03	0.00	0.00
Utah	Lodging	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,075	20	$207	8.8%	100%	$0.01	327	327
Utah	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	296	20	$806	100%	N/A	$0.21	0.00	0.00
Utah	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	332	20	$1,082	100%	N/A	$0.25	103	108
Utah	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	260	20	$63	100%	N/A	$0.02	0.00	0.00
Utah	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	82	20	$28	100%	N/A	$0.03	0.00	0.00
Utah	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,110	15	$1,417	75%	76%	$0.03	1,258	1,258
Utah	Lodging	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	777	18	$1,944	45%	65%	$0.18	153	153
Utah	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,665	14	$13,932	5.0%	94%	$0.23	146	146
Utah	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,399	12	$5,450	10%	75%	$0.27	69	69
Utah	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	6,993	15	$3,140	60%	97%	$0.03	2,673	2,673
Utah	Lodging	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,110	12	$432	10%	39%	$0.01	69	69
Utah	Lodging	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,620	25	$4,266	45%	65%	$0.09	607	607
Utah	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	775	25	$2,052	25%	85%	$0.20	91	91
Utah	Lodging	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	933	20	$1,409	45%	56%	$0.11	129	129
Utah	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	559	20	$247	45%	85%	$0.03	116	116
Utah	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	10,868	25	$7,614	15%	78%	$0.05	688	688
Utah	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	1,392	25	$2,349	15%	90%	$0.13	97	97
Utah	Lodging	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,956	10%	85%	.	0.00	0.00
Utah	Lodging	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,718	10%	70%	.	0.00	0.00
Utah	Lodging	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,888	7	$1,596	90%	85%	$0.03	1,540	1,540
Utah	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	5,032	25	$15	15%	90%	$0.00	317	317

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Utah	Lodging	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,316	25	$630	15%	71%	$0.01	210	210
Utah	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,798	15	$1,417	75%	76%	$0.05	146	146
Utah	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,697	14	$13,932	5.0%	94%	$0.40	16	16
Utah	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	809	12	$5,450	10%	75%	$0.47	8	8
Utah	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	4,043	15	$3,140	60%	97%	$0.06	303	303
Utah	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	448	25	$2,052	75%	85%	$0.35	24	24
Utah	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	323	20	$247	45%	85%	$0.05	10	10
Utah	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	804	25	$2,349	35%	90%	$0.22	21	21
Utah	Lodging	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,798	15	$8,100	10%	75%	$0.31	14	14
Utah	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,909	25	$15	80%	90%	$0.00	202	202
Utah	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	198	10	$27	100%	N/A	$0.01	225	225
Utah	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	198	10	$27	100%	N/A	$0.01	50	50
Utah	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	4,163	10	$993	5.0%	90%	$0.02	453	453
Utah	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$5,250	95%	45%	$0.36	1,159	1,159
Utah	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	212	15	$53	95%	76%	$0.02	358	358
Utah	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	5,308	20	$901	55%	45%	$0.01	3,058	3,058
Utah	Lodging	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	143	7	$40	65%	25%	$0.02	0.00	0.00
Utah	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	4,131	10	$993	5.0%	90%	$0.02	90	90
Utah	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$5,250	95%	45%	$0.36	226	226
Utah	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	210	15	$53	95%	76%	$0.02	71	71
Utah	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	5,267	20	$901	55%	45%	$0.01	455	455
Utah	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,872	15	$2,095	75%	N/A	$0.02	0.95	21

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Utah	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,786	15	$1,252	75%	N/A	$0.01	0.00	0.00
Utah	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,872	15	$2,095	75%	N/A	$0.02	0.26	4
Utah	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,786	15	$1,252	75%	N/A	$0.01	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.03	3	4
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.07	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	660	10	$2,250	55%	80%	$0.26	5	5
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.21	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.23	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.22	0.01	0.01
Utah	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	263	12	$149	60%	95%	$0.04	2	3
Utah	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	241	12	$149	60%	94%	$0.05	2	3
Utah	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,641	25	$5,200	2.5%	100%	$0.15	1	1
Utah	Lodging	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	132	12	$165	80%	90%	$0.10	1	1
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	210	9	$227	95%	25%	$0.08	0.91	0.91
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.02	10	10
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,442	10	$189	95%	73%	$0.00	43	43
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,776	10	$471	95%	62%	$0.01	29	29
Utah	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	330	10	$3,179	75%	95%	$0.74	4	4
Utah	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,505	10	$596	5.0%	94%	$0.03	0.72	0.72
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.03	0.60	0.60
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	654	10	$2,250	55%	80%	$0.26	0.81	0.81
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.21	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.23	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.22	0.00	0.00
Utah	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	253	12	$144	60%	95%	$0.04	0.41	0.41
Utah	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	232	12	$144	60%	94%	$0.05	0.37	0.37
Utah	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,617	25	$4,160	2.5%	100%	$0.12	0.06	0.06
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	208	9	$1	95%	25%	$0.00	0.14	0.14
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.02	1	1
Utah	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,442	10	$189	95%	73%	$0.00	6	6
Utah	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	327	10	$3,179	75%	95%	$0.75	0.66	0.66
Utah	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,492	10	$596	5.0%	94%	$0.03	0.13	0.13
Utah	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,169	15	$10,761	75%	N/A	$0.12	859	1,135
Utah	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	430	15	$470	100%	N/A	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,169	15	$10,761	75%	N/A	$0.12	244	255
Utah	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	430	15	$470	100%	N/A	$0.08	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.03	50	58
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.07	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	675	10	$2,250	25%	94%	$0.26	37	37
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.21	0.00	0.06
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.05	0.16	0.19
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.23	0.00	0.17

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.22	1	1
Utah	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	263	12	$149	50%	95%	$0.04	29	34
Utah	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	241	12	$149	50%	95%	$0.05	27	32
Utah	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,701	25	$5,200	2.5%	100%	$0.15	15	15
Utah	Lodging	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	135	12	$165	80%	90%	$0.09	22	22
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	214	9	$227	95%	25%	$0.08	12	12
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.02	135	135
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	3,442	10	$189	95%	73%	$0.00	572	572
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,776	10	$471	95%	62%	$0.01	390	390
Utah	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	337	10	$3,179	75%	95%	$0.72	57	57
Utah	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,539	10	$596	2.5%	94%	$0.03	5	5
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.03	8	8
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.06	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.07	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.05	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.04	0.00	0.00
Utah	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	656	10	$2,250	25%	94%	$0.26	6	6
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.21	0.00	0.01
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.05	0.02	0.02
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.23	0.00	0.03
Utah	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.22	0.21	0.21
Utah	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	253	12	$144	50%	95%	$0.04	5	5
Utah	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	232	12	$144	50%	95%	$0.05	4	4
Utah	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,625	25	$4,160	2.5%	100%	$0.12	0.89	0.89
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	208	9	$1	95%	25%	$0.00	2	2
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.02	23	23
Utah	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	3,442	10	$189	95%	73%	$0.00	99	99
Utah	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	328	10	$3,179	75%	95%	$0.74	9	9
Utah	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,496	10	$596	2.5%	94%	$0.03	1	1
Utah	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	213	4	$24	100%	N/A	$0.01	1,534	1,788
Utah	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	329	4	$24	95%	30%	$0.01	4,167	4,167
Utah	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	213	4	$24	100%	N/A	$0.01	155	158
Utah	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	329	4	$24	95%	30%	$0.01	875	875

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Utah	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,004	15	$1,071	25%	94%	$0.08	94	94
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,106	20	$2,790	100%	N/A	$0.10	473	557
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	702	20	$930	100%	N/A	$0.10	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,566	20	$2,074	100%	N/A	$0.10	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,013	15	$13,034	5.0%	65%	$0.27	38	38
Utah	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,004	15	$1,500	45%	95%	$0.11	167	167
Utah	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,004	15	$750	75%	76%	$0.05	212	212
Utah	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	451	12	$5,450	1.0%	75%	$0.74	1	1
Utah	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,004	40	$43,432	2.0%	**%	$3.32	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	502	12	$57	5.0%	39%	$0.01	3	3
Utah	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	16	25	$2,258	45%	65%	$0.56	1	1
Utah	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	3	25	$1,086	25%	85%	$1.27	0.25	0.25
Utah	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,030	15%	80%	.	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$1,243	15%	90%	.	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,035	10%	85%	.	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,908	10%	71%	.	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,255	7	$845	90%	85%	$0.04	337	337
Utah	Miscellaneous	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	413	10	$503	35%	68%	$0.09	31	31
Utah	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,625	25	$1	15%	90%	$0.00	68	68
Utah	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,393	25	$83	15%	70%	$0.00	44	44
Utah	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	578	15	$571	25%	94%	$0.08	10	10
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,464	20	$2,511	100%	N/A	$0.13	101	102
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	488	20	$837	100%	N/A	$0.13	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,089	20	$1,867	100%	N/A	$0.13	0.00	0.00

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Utah	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	578	15	$1,500	45%	95%	$0.20	18	18
Utah	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	578	15	$750	75%	76%	$0.09	24	24
Utah	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	260	12	$5,450	1.0%	75%	$1.38	0.13	0.13
Utah	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	578	40	$43,432	2.0%	**%	$5.77	0.00	0.00
Utah	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	2	25	$1,086	75%	85%	$3.16	0.06	0.06
Utah	Miscellaneous	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	578	15	$4,287	10%	75%	$0.49	2	2
Utah	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	935	25	$1	80%	90%	$0.00	41	41
Utah	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	337	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	861	15	$432	100%	N/A	$0.04	0.00	0.00
Utah	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	7,134	15	$-9053.9798	29%	N/A	$0.02	2,955	4,103
Utah	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	233	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	596	15	$345	100%	N/A	$0.04	0.00	0.00
Utah	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	4,940	15	$-6600.7499	29%	N/A	$0.02	590	616
Utah	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,215	15	$1,071	50%	94%	$0.07	10,153	10,153
Utah	Miscellaneous	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,645	15	$13,034	15%	67%	$0.23	6,251	6,251
Utah	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,215	15	$1,500	45%	98%	$0.09	8,803	8,803
Utah	Miscellaneous	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,822	10	$2,701	10%	70%	$0.11	2,003	2,003
Utah	Miscellaneous	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,215	5	$762	95%	72%	$0.05	12,959	12,959
Utah	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	3,038	15	$8,932	50%	94%	$0.23	20,673	20,673
Utah	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,215	15	$750	75%	76%	$0.04	8,814	8,814
Utah	Miscellaneous	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	303	18	$1,029	45%	65%	$0.22	1,074	1,074

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Utah	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	546	12	$5,450	1.0%	75%	$0.63	49	49
Utah	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,215	40	$43,432	2.0%	**%	$2.75	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	607	12	$57	10%	39%	$0.01	281	281
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	19	25	$2,258	45%	65%	$0.56	69	69
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	4	25	$1,086	25%	85%	$1.25	10	10
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	364	20	$745	45%	61%	$0.13	1,197	1,197
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	218	20	$130	45%	85%	$0.04	989	989
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,030	15%	80%	.	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$1,243	15%	90%	.	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,035	10%	85%	.	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,908	10%	71%	.	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,519	7	$845	90%	85%	$0.04	13,685	13,685
Utah	Miscellaneous	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	413	10	$503	35%	68%	$0.09	1,045	1,045
Utah	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,966	25	$1	15%	90%	$0.00	2,795	2,795
Utah	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,686	25	$83	15%	70%	$0.00	1,819	1,819
Utah	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	777	15	$571	50%	94%	$0.06	1,346	1,346
Utah	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	777	15	$1,500	45%	98%	$0.15	1,168	1,168
Utah	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,943	15	$8,932	50%	94%	$0.35	2,976	2,976
Utah	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	777	15	$750	75%	76%	$0.07	1,308	1,308
Utah	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	349	12	$5,450	1.0%	75%	$1.06	7	7
Utah	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	777	40	$43,432	2.0%	**%	$4.29	0.00	0.00
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	2	25	$1,086	75%	85%	$3.08	3	3
Utah	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	139	20	$130	45%	85%	$0.06	109	109
Utah	Miscellaneous	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	777	15	$4,287	10%	75%	$0.38	156	156
Utah	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,258	25	$1	80%	90%	$0.00	2,174	2,174
Utah	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,394	15	$1,500	45%	98%	$0.08	0.00	0.00

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Utah	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,394	15	$750	75%	76%	$0.04	0.00	0.00
Utah	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	627	12	$5,450	1.0%	75%	$0.57	0.00	0.00
Utah	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,394	40	$43,432	2.0%	**%	$2.39	0.00	0.00
Utah	Miscellaneous	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	697	12	$57	10%	39%	$0.00	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	22	25	$2,258	45%	65%	$0.55	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	4	25	$1,086	25%	85%	$1.24	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,030	15%	80%	.	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$1,243	15%	90%	.	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,035	10%	85%	.	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,908	10%	71%	.	0.00	0.00
Utah	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,226	9	$349	5.0%	N/A	$0.02	0.00	0.00
Utah	Miscellaneous	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	413	10	$503	35%	68%	$0.09	0.00	0.00
Utah	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,256	25	$1	15%	90%	$0.00	0.00	0.00
Utah	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,935	25	$83	15%	70%	$0.00	0.00	0.00
Utah	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	923	15	$1,500	45%	98%	$0.12	0.00	0.00
Utah	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	923	15	$750	75%	76%	$0.06	0.00	0.00
Utah	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	415	12	$5,450	1.0%	75%	$0.91	0.00	0.00
Utah	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	923	40	$43,432	2.0%	**%	$3.61	0.00	0.00
Utah	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	3	25	$1,086	75%	85%	$3.03	0.00	0.00
Utah	Miscellaneous	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	923	15	$4,287	10%	75%	$0.32	0.00	0.00
Utah	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	814	9	$279	5.0%	N/A	$0.03	0.00	0.00
Utah	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,494	25	$1	80%	90%	$0.00	0.00	0.00
Utah	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	32	6	$0.69	100%	N/A	$0.00	1,466	1,466
Utah	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	32	6	$0.69	100%	N/A	$0.00	295	295
Utah	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	28	4	$32	100%	N/A	$0.09	73	73
Utah	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	28	4	$32	100%	N/A	$0.09	99	99
Utah	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.35	100%	N/A	$0.01	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.17	100%	N/A	$0.00	0.00	5
Utah	Miscellaneous	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	45	20	$6	8.8%	100%	$0.01	175	175
Utah	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.35	100%	N/A	$0.01	0.00	0.00
Utah	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.17	100%	N/A	$0.00	0.00	3
Utah	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	865	15	$1,609	100%	N/A	$0.14	0.00	0.00
Utah	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,402	15	$3,218	100%	N/A	$0.10	1,386	1,692
Utah	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,584	15	$1,071	50%	94%	$0.05	751	751
Utah	Miscellaneous	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	7,499	15	$13,034	15%	67%	$0.13	742	742
Utah	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,584	15	$1,500	45%	98%	$0.07	662	662
Utah	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,499	15	$750	75%	76%	$0.02	1,309	1,309
Utah	Miscellaneous	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	624	18	$1,029	45%	65%	$0.13	159	159
Utah	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,372	14	$7,374	5.0%	94%	$0.41	55	55
Utah	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,124	12	$5,450	1.0%	75%	$0.37	7	7
Utah	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,584	40	$43,432	2.0%	**%	$2.11	0.00	0.00
Utah	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,970	30	$95,416	5.0%	N/A	$1.23	115	157
Utah	Miscellaneous	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,874	12	$57	10%	39%	$0.00	62	62
Utah	Miscellaneous	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,084	25	$2,258	45%	65%	$0.16	273	273
Utah	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	232	25	$1,086	25%	85%	$0.36	41	41
Utah	Miscellaneous	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	749	20	$745	45%	61%	$0.08	174	174
Utah	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	449	20	$130	45%	85%	$0.02	144	144
Utah	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,749	25	$4,030	15%	80%	$0.11	276	276
Utah	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	400	25	$1,243	15%	90%	$0.24	44	44

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,035	10%	85%	.	0.00	0.00
Utah	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,908	10%	71%	.	0.00	0.00
Utah	Miscellaneous	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,124	7	$845	90%	85%	$0.02	1,966	1,966
Utah	Miscellaneous	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	413	10	$503	35%	68%	$0.09	73	73
Utah	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	4,045	25	$1	15%	90%	$0.00	403	403
Utah	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,469	25	$83	15%	70%	$0.00	262	262
Utah	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	501	15	$1,287	100%	N/A	$0.20	0.00	0.00
Utah	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,241	15	$2,575	100%	N/A	$0.16	197	202
Utah	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	805	15	$571	50%	94%	$0.05	79	79
Utah	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	805	15	$1,500	45%	98%	$0.14	69	70
Utah	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,270	15	$750	75%	76%	$0.05	142	142
Utah	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	697	14	$7,374	5.0%	94%	$0.81	6	6
Utah	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	571	12	$5,450	1.0%	75%	$0.73	0.79	0.79
Utah	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	805	40	$43,432	2.0%	**%	$4.14	0.00	0.00
Utah	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,547	30	$49,013	5.0%	N/A	$1.06	24	24
Utah	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	117	25	$1,086	75%	85%	$0.71	10	10
Utah	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	228	20	$130	45%	85%	$0.04	11	11
Utah	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	203	25	$1,243	35%	90%	$0.47	8	8
Utah	Miscellaneous	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,270	15	$4,287	10%	75%	$0.26	16	16
Utah	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,055	25	$1	80%	90%	$0.00	233	233
Utah	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	401	8	$111	5.0%	95%	$0.02	1,011	1,011
Utah	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,142	8	$445	75%	70%	$0.03	31,813	31,813
Utah	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	949	15	$1,282	62%	90%	$0.10	28,085	28,085
Utah	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	479	8	$784	90%	49%	$0.13	8,771	8,771

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Utah	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	46	13	$69	75%	95%	$0.11	1,768	1,768
Utah	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	3,905	17	$2,653	5.0%	95%	$0.05	9,837	9,837
Utah	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	401	8	$111	5.0%	95%	$0.02	202	202
Utah	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,142	8	$445	75%	70%	$0.03	6,383	6,383
Utah	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	949	15	$1,282	62%	90%	$0.10	5,635	5,635
Utah	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	479	8	$784	90%	49%	$0.13	1,759	1,759
Utah	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	46	13	$69	75%	95%	$0.11	343	343
Utah	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	3,905	17	$2,653	5.0%	95%	$0.05	1,796	1,796
Utah	Miscellaneous	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	247	10	$356	5.0%	95%	$0.11	512	512
Utah	Miscellaneous	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,886	8	$4,287	20%	84%	$0.17	13,806	13,806
Utah	Miscellaneous	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,415	8	$3,215	20%	84%	$0.17	5,044	5,044
Utah	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	130	6	$48	10%	80%	$0.03	454	454
Utah	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	79	6	$40	5.0%	80%	$0.04	139	139
Utah	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	860	13	$997	100%	N/A	$0.09	25,637	26,684
Utah	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	607	13	$312	100%	N/A	$0.04	0.00	0.00
Utah	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,540	13	$9,913	25%	N/A	$0.49	15,309	15,934
Utah	Miscellaneous	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,124	8	$784	75%	49%	$0.05	17,352	17,352
Utah	Miscellaneous	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	786	15	$359	100%	N/A	$0.04	0.00	0.00
Utah	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	963	15	$1,560	95%	N/A	$0.12	17,327	17,662
Utah	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	860	20	$11,437	50%	N/A	$1.02	474	488
Utah	Miscellaneous	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	549	13	$-12.810168	25%	N/A	$0.00	0.00	0.00

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Utah	Miscellaneous	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	275	15	$7,241	100%	N/A	$2.02	0.00	0.00
Utah	Miscellaneous	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	362	8	$784	75%	49%	$0.17	6,655	6,655
Utah	Miscellaneous	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	298	11	$116	95%	50%	$0.03	7,509	7,509
Utah	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	59	13	$51	95%	98%	$0.07	2,943	2,943
Utah	Miscellaneous	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	322	10	$356	5.0%	95%	$0.09	146	146
Utah	Miscellaneous	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,542	8	$4,287	20%	84%	$0.21	2,476	2,476
Utah	Miscellaneous	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,156	8	$3,215	20%	84%	$0.21	0.00	0.00
Utah	Miscellaneous	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	100	6	$24	10%	80%	$0.02	77	77
Utah	Miscellaneous	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	45	6	$17	10%	80%	$0.03	34	34
Utah	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	59	13	$51	95%	98%	$0.07	531	531
Utah	Miscellaneous	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,610	13	$4,024	100%	N/A	$0.19	16,214	16,292
Utah	Miscellaneous	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,465	8	$784	75%	49%	$0.04	5,045	5,045
Utah	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,838	4	$57	85%	N/A	$0.00	0.00	17,747
Utah	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,233	1	$38	100%	N/A	$0.00	0.00	0.00
Utah	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,145	1	$29	100%	N/A	$0.00	0.00	0.00
Utah	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,878	12	$716	15%	N/A	$0.01	2,353	16,707
Utah	Miscellaneous	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	309	8	$784	75%	49%	$0.19	2,099	2,099
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.79	10%	90%	$0.02	14	14
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	49	4	$0.00	10%	45%	$0.00	118	118
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	772	772

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Utah	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$0.64	5.0%	86%	$0.00	22	22
Utah	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	85	4	$17	60%	90%	$0.02	2,455	2,455
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.79	10%	90%	$0.02	2	2
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	49	4	$0.00	10%	45%	$0.00	23	23
Utah	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	154	154
Utah	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$0.64	5.0%	86%	$0.00	4	4
Utah	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	85	4	$17	60%	90%	$0.02	492	492
Utah	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	100	6	$109	100%	N/A	$0.08	155	155
Utah	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	100	6	$109	100%	N/A	$0.08	47	47
Utah	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	62	6	$7	100%	N/A	$0.01	296	296
Utah	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	62	6	$7	100%	N/A	$0.01	0.06	0.06
Utah	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	253	15	$61	2.5%	77%	$0.02	28	28
Utah	Miscellaneous	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	174	15	$18	2.5%	90%	$0.01	22	22
Utah	Miscellaneous	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	13	15	$8	2.5%	90%	$0.05	1	1
Utah	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	171	10	$142	1.0%	80%	$0.06	7	7
Utah	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	232	10	$192	1.0%	80%	$0.06	10	10
Utah	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	25	8	$2	2.5%	95%	$0.01	3	3
Utah	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	62	5	$10	5.0%	85%	$0.01	15	15
Utah	Miscellaneous	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	95	13	$13	2.5%	90%	$0.01	12	12
Utah	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	287	15	$71	1.0%	98%	$0.02	16	16
Utah	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	4	10	$0.90	1.0%	85%	$0.01	0.24	0.24
Utah	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	25	15	$28	2.5%	95%	$0.09	3	3
Utah	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	14	15	$12	2.5%	95%	$0.07	1	1
Utah	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	253	15	$61	2.5%	77%	$0.02	5	5
Utah	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	171	10	$142	1.0%	80%	$0.06	1	1
Utah	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	232	10	$192	1.0%	80%	$0.06	2	2
Utah	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	25	8	$2	2.5%	95%	$0.01	0.69	0.69

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Utah	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	62	5	$10	5.0%	85%	$0.01	3	3
Utah	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	287	15	$71	1.0%	98%	$0.02	3	3
Utah	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	4	10	$0.90	1.0%	85%	$0.01	0.04	0.04
Utah	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	25	15	$28	2.5%	95%	$0.09	0.68	0.68
Utah	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	14	15	$12	2.5%	95%	$0.07	0.37	0.37
Utah	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	82	20	$223	100%	N/A	$0.21	0.00	0.00
Utah	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	92	20	$300	100%	N/A	$0.25	1,224	1,483
Utah	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	72	20	$17	100%	N/A	$0.02	0.00	0.00
Utah	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	23	20	$8	100%	N/A	$0.03	0.00	0.00
Utah	Miscellaneous	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	575	20	$57	8.8%	100%	$0.01	1,989	1,989
Utah	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	82	20	$223	100%	N/A	$0.21	0.00	0.00
Utah	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	92	20	$300	100%	N/A	$0.25	628	656
Utah	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	72	20	$17	100%	N/A	$0.02	0.00	0.00
Utah	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	23	20	$8	100%	N/A	$0.03	0.00	0.00
Utah	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	13	9	$1	100%	N/A	$0.01	581	596
Utah	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	46	4	$173	10%	50%	$0.29	97	97
Utah	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	13	9	$1	100%	N/A	$0.01	124	124
Utah	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	46	4	$173	10%	50%	$0.29	19	19
Utah	Miscellaneous	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,755	15	$13,034	15%	67%	$0.16	3,330	3,330
Utah	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,251	15	$750	75%	76%	$0.03	6,041	6,041
Utah	Miscellaneous	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	312	18	$1,029	45%	65%	$0.15	736	736
Utah	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,877	14	$7,374	5.0%	94%	$0.30	702	702
Utah	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	563	12	$5,450	1.0%	75%	$0.45	33	33
Utah	Miscellaneous	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,251	12	$57	10%	39%	$0.00	383	383
Utah	Miscellaneous	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,457	25	$2,258	45%	65%	$0.12	3,362	3,362
Utah	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	312	25	$1,086	25%	85%	$0.27	503	503
Utah	Miscellaneous	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	375	20	$745	45%	61%	$0.09	781	781

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Utah	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	225	20	$130	45%	85%	$0.03	645	645
Utah	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,374	25	$4,030	15%	80%	$0.07	3,928	3,928
Utah	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	560	25	$1,243	15%	90%	$0.17	539	539
Utah	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$1,035	10%	85%	.	0.00	0.00
Utah	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,908	10%	71%	.	0.00	0.00
Utah	Miscellaneous	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,564	7	$845	90%	85%	$0.03	8,507	8,507
Utah	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,025	25	$1	15%	90%	$0.00	1,751	1,751
Utah	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,737	25	$83	15%	70%	$0.00	1,140	1,140
Utah	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	488	15	$750	75%	76%	$0.06	488	488
Utah	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	733	14	$7,374	5.0%	94%	$0.77	56	56
Utah	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	219	12	$5,450	1.0%	75%	$0.92	2	2
Utah	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	121	25	$1,086	75%	85%	$0.67	93	93
Utah	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	87	20	$130	45%	85%	$0.06	40	40
Utah	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	218	25	$1,243	35%	90%	$0.44	81	81
Utah	Miscellaneous	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	488	15	$4,287	10%	75%	$0.33	56	56
Utah	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	790	25	$1	80%	90%	$0.00	781	781
Utah	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	207	10	$28	100%	N/A	$0.01	5,161	5,161
Utah	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	207	10	$28	100%	N/A	$0.01	1,147	1,147
Utah	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,195	10	$525	5.0%	90%	$0.02	5,237	5,237
Utah	Miscellaneous	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,292	15	$13,034	15%	67%	$0.30	17,512	17,512
Utah	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	93	18	$200	95%	65%	$0.16	3,053	3,053
Utah	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	111	15	$28	95%	76%	$0.02	4,082	4,082
Utah	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,798	20	$477	55%	45%	$0.01	34,844	34,844
Utah	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	576	15	$1,565	13%	77%	$0.21	2,700	2,700

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Utah	Miscellaneous	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	75	7	$21	65%	25%	$0.02	0.00	0.00
Utah	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	175	18	$1,705	5.0%	59%	$0.75	276	276
Utah	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	1,835	10	$525	5.0%	90%	$0.02	878	878
Utah	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	559	18	$1,200	95%	50%	$0.16	2,759	2,759
Utah	Miscellaneous	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	3,215	50	$10,718	16%	98%	$0.26	3,790	3,790
Utah	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	93	15	$28	95%	76%	$0.02	651	651
Utah	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,339	20	$477	55%	45%	$0.02	4,161	4,161
Utah	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	481	15	$1,565	13%	77%	$0.25	430	430
Utah	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	146	18	$1,705	5.0%	59%	$0.89	45	45
Utah	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	869	15	$322	75%	N/A	$0.03	3	65
Utah	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	859	15	$192	75%	N/A	$0.02	0.00	0.00
Utah	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	894	15	$322	75%	N/A	$0.03	0.93	15
Utah	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	885	15	$192	75%	N/A	$0.02	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.03	0.15	0.19
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.06	0.00	0.00

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Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.07	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	72	10	$1,191	55%	94%	$1.25	19	19
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.21	0.00	0.03
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.05	0.07	0.09
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.23	0.00	0.09
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.22	0.58	0.72
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	95%	$0.04	0.02	0.02
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	3	12	$2	1.0%	94%	$0.05	0.01	0.02
Utah	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	291	25	$800	2.5%	100%	$0.21	3	3
Utah	Miscellaneous	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	14	12	$25	80%	90%	$0.13	5	5
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	23	9	$12	95%	25%	$0.04	2	2
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.02	96	96
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	96	10	$10	95%	73%	$0.01	33	33
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	77	10	$24	95%	62%	$0.02	23	23
Utah	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	36	10	$168	75%	95%	$0.35	13	13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	166	10	$141	2.5%	94%	$0.07	1	1
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.03	0.02	0.02
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.07	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	74	10	$1,191	55%	94%	$1.23	3	3
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.21	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.05	0.01	0.01
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.23	0.00	0.01
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.22	0.08	0.08

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	95%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	3	12	$2	1.0%	94%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	297	25	$640	2.5%	100%	$0.17	0.19	0.19
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	23	9	$0.08	95%	25%	$0.00	0.44	0.44
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.02	15	15
Utah	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	96	10	$10	95%	73%	$0.01	5	5
Utah	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	37	10	$168	75%	95%	$0.35	2	2
Utah	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	169	10	$141	2.5%	94%	$0.06	0.24	0.24
Utah	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	791	15	$1,655	75%	N/A	$0.16	3,187	3,709
Utah	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	47	15	$72	100%	N/A	$0.12	0.00	0.00
Utah	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	814	15	$1,655	75%	N/A	$0.16	868	896
Utah	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	48	15	$72	100%	N/A	$0.11	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.03	2	2
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.07	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	74	10	$1,191	25%	94%	$1.23	116	116
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.21	0.00	0.39
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.05	1	1
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.23	0.00	1
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.22	7	8
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.04	1	1
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	3	12	$2	5.0%	95%	$0.05	1	1
Utah	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	298	25	$800	2.5%	100%	$0.21	49	49
Utah	Miscellaneous	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	14	12	$25	80%	90%	$0.13	70	70
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	23	9	$12	95%	25%	$0.04	37	37
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.02	1,261	1,261
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	96	10	$10	95%	73%	$0.01	444	444
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	77	10	$24	95%	62%	$0.02	303	303
Utah	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	37	10	$168	75%	95%	$0.35	177	177
Utah	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	169	10	$141	2.5%	94%	$0.06	20	20

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Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.03	0.34	0.34
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.06	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.07	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.05	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.04	0.00	0.00
Utah	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	74	10	$1,191	25%	94%	$1.23	20	20
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.21	0.00	0.08
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.05	0.17	0.17
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.23	0.00	0.22
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.22	1	1
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.04	0.23	0.23

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	3	12	$2	5.0%	95%	$0.05	0.21	0.21
Utah	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	298	25	$640	2.5%	100%	$0.16	2	2
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	23	9	$0.08	95%	25%	$0.00	6	6
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.02	219	219
Utah	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	96	10	$10	95%	73%	$0.01	77	77
Utah	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	37	10	$168	75%	95%	$0.35	30	30
Utah	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	170	10	$141	2.5%	94%	$0.06	3	3
Utah	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	54	4	$6	100%	N/A	$0.01	37	37
Utah	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	54	4	$6	100%	N/A	$0.01	3	3
Utah	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	4,663	12	$786	90%	90%	$0.01	825	825
Utah	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	420	12	$1,097	70%	86%	$0.20	54	54
Utah	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	943	12	$229	95%	85%	$0.02	166	166
Utah	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	1,644	12	$931	40%	45%	$0.04	0.00	0.00
Utah	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	2,680	12	$1,713	35%	21%	$0.05	43	43
Utah	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	4,630	12	$2,608	39%	75%	$0.04	292	292
Utah	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	4,663	12	$786	90%	90%	$0.01	165	165
Utah	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	420	12	$1,097	70%	86%	$0.20	11	11
Utah	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	943	12	$229	95%	85%	$0.02	33	33
Utah	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	1,644	12	$931	40%	45%	$0.04	0.00	0.00
Utah	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	2,680	12	$1,713	35%	21%	$0.05	8	8
Utah	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	4,630	12	$2,608	39%	75%	$0.04	58	58
Utah	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	394	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,007	15	$499	100%	N/A	$0.04	0.00	0.00

Table C-2.2. Commercial Measure Details

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Utah	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	8,344	15	$-10452.991	20%	N/A	$0.02	422	550
Utah	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	244	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	626	15	$399	100%	N/A	$0.05	0.00	0.00
Utah	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	5,184	15	$-7620.6909	20%	N/A	$0.03	75	77
Utah	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,491	15	$962	45%	98%	$0.05	1,725	1,725
Utah	Restaurant	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,236	10	$3,118	10%	50%	$0.11	280	280
Utah	Restaurant	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,491	5	$880	95%	72%	$0.05	2,548	2,548
Utah	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	3,728	15	$5,729	50%	94%	$0.12	4,065	4,065
Utah	Restaurant	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	372	18	$660	45%	65%	$0.11	224	224
Utah	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	671	12	$5,450	65%	75%	$0.51	664	664
Utah	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,491	40	$27,857	2.0%	**%	$1.44	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	745	12	$112	40%	39%	$0.01	229	229
Utah	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	24	25	$1,448	45%	58%	$0.26	12	12
Utah	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	5	25	$696	25%	85%	$0.59	2	2
Utah	Restaurant	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	447	20	$478	45%	58%	$0.07	228	228
Utah	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	268	20	$83	45%	85%	$0.02	200	200
Utah	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,585	15%	82%	.	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$797	15%	90%	.	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$664	10%	85%	.	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,355	10%	68%	.	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,864	7	$542	90%	85%	$0.02	2,776	2,776
Utah	Restaurant	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	742	10	$989	35%	68%	$0.10	310	310
Utah	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,413	25	$3	15%	90%	$0.00	565	565
Utah	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,069	25	$163	15%	75%	$0.00	395	395
Utah	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	853	15	$962	45%	98%	$0.09	199	199

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Utah	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,132	15	$5,729	50%	94%	$0.21	508	508
Utah	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	383	12	$5,450	65%	75%	$0.92	86	86
Utah	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	853	40	$27,857	2.0%	**%	$2.51	0.00	0.00
Utah	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	2	25	$696	75%	85%	$1.25	0.62	0.62
Utah	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	153	20	$83	45%	85%	$0.04	19	19
Utah	Restaurant	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	853	15	$2,750	10%	75%	$0.21	27	27
Utah	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,380	25	$3	80%	90%	$0.00	385	385
Utah	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	85	6	$1	100%	N/A	$0.00	314	314
Utah	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	85	6	$1	100%	N/A	$0.00	63	63
Utah	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	7	4	$8	100%	N/A	$0.09	1	1
Utah	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	7	4	$8	100%	N/A	$0.09	2	2
Utah	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	24	20	$0.65	100%	N/A	$0.00	0.00	1
Utah	Restaurant	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	169	20	$23	8.8%	100%	$0.01	52	52
Utah	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	24	20	$0.65	100%	N/A	$0.00	0.00	1
Utah	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	863	15	$1,858	100%	N/A	$0.17	0.00	0.00
Utah	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,107	15	$3,716	100%	N/A	$0.14	0.00	0.00
Utah	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,619	15	$962	45%	98%	$0.05	0.00	0.00
Utah	Restaurant	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	589	18	$660	45%	65%	$0.09	0.00	0.00
Utah	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,108	14	$4,730	5.0%	94%	$0.33	0.00	0.00
Utah	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,061	12	$5,450	65%	75%	$0.39	0.00	0.00
Utah	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,619	40	$27,857	2.0%	**%	$1.32	0.00	0.00

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Utah	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	6,120	30	$10,160	5.0%	N/A	$1.38	0.00	0.00
Utah	Restaurant	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,768	12	$112	40%	39%	$0.00	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	881	25	$1,448	45%	58%	$0.13	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	188	25	$696	25%	85%	$0.28	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	707	20	$478	45%	58%	$0.05	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	424	20	$83	45%	85%	$0.02	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,506	25	$2,585	15%	82%	$0.13	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	297	25	$797	15%	90%	$0.21	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$664	10%	85%	.	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,355	10%	68%	.	0.00	0.00
Utah	Restaurant	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,947	7	$542	90%	85%	$0.01	0.00	0.00
Utah	Restaurant	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	742	10	$989	35%	68%	$0.10	0.00	0.00
Utah	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	3,815	25	$3	15%	90%	$0.00	0.00	0.00
Utah	Restaurant	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,272	25	$163	15%	75%	$0.00	0.00	0.00
Utah	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	506	15	$1,486	100%	N/A	$0.23	0.00	0.00
Utah	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,198	15	$2,972	100%	N/A	$0.19	0.00	0.00
Utah	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	865	15	$962	45%	98%	$0.09	0.00	0.00
Utah	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	592	14	$4,730	5.0%	94%	$0.61	0.00	0.00
Utah	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	566	12	$5,450	65%	75%	$0.74	0.00	0.00
Utah	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	865	40	$27,857	2.0%	**%	$2.47	0.00	0.00
Utah	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,615	30	$56,587	5.0%	N/A	$1.20	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	100	25	$696	75%	85%	$0.53	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	226	20	$83	45%	85%	$0.03	0.00	0.00
Utah	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	158	25	$797	35%	90%	$0.39	0.00	0.00
Utah	Restaurant	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,259	15	$2,750	10%	75%	$0.17	0.00	0.00

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Utah	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,038	25	$3	80%	90%	$0.00	0.00	0.00
Utah	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	257	8	$71	5.0%	95%	$0.02	52	52
Utah	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,406	8	$356	75%	70%	$0.02	3,151	3,151
Utah	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,168	15	$1,578	62%	90%	$0.10	2,777	2,777
Utah	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	590	8	$503	45%	64%	$0.07	565	565
Utah	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	39	13	$58	75%	95%	$0.11	119	119
Utah	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,505	17	$1,702	5.0%	95%	$0.05	507	507
Utah	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	257	8	$71	5.0%	95%	$0.02	10	10
Utah	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,406	8	$356	75%	70%	$0.02	632	632
Utah	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,168	15	$1,578	62%	90%	$0.10	557	557
Utah	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	590	8	$503	45%	64%	$0.07	113	113
Utah	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	39	13	$58	75%	95%	$0.11	23	23
Utah	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,505	17	$1,702	5.0%	95%	$0.05	92	92
Utah	Restaurant	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	249	10	$228	0.5%	95%	$0.07	4	4
Utah	Restaurant	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,381	8	$2,750	5.0%	98%	$0.09	416	416
Utah	Restaurant	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,786	8	$2,062	5.0%	98%	$0.09	309	309
Utah	Restaurant	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	922	6	$342	25%	80%	$0.03	659	659
Utah	Restaurant	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	566	6	$287	25%	80%	$0.04	404	404
Utah	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	635	13	$258	100%	N/A	$0.03	0.00	0.00
Utah	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,070	13	$803	100%	N/A	$0.06	2,626	2,691
Utah	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,799	13	$7,238	25%	N/A	$0.31	1,471	1,508
Utah	Restaurant	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,136	8	$503	5.0%	64%	$0.03	124	124
Utah	Restaurant	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	163	15	$57	100%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Restaurant	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	199	15	$251	95%	N/A	$0.10	294	294
Utah	Restaurant	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	178	16	$1,847	50%	N/A	$0.80	11	11
Utah	Restaurant	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	113	10	$-2.970986	25%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	57	15	$1,169	100%	N/A	$1.58	0.00	0.00
Utah	Restaurant	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	74	8	$503	5.0%	64%	$0.52	9	9
Utah	Restaurant	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	481	11	$187	95%	50%	$0.03	975	975
Utah	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	96	13	$82	95%	98%	$0.07	382	382
Utah	Restaurant	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	423	10	$228	0.5%	95%	$0.04	1	1
Utah	Restaurant	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,072	8	$2,750	5.0%	98%	$0.10	74	74
Utah	Restaurant	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,554	8	$2,062	5.0%	98%	$0.10	55	55
Utah	Restaurant	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	714	6	$174	25%	80%	$0.02	105	105
Utah	Restaurant	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	322	6	$125	25%	80%	$0.03	47	47
Utah	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	96	13	$82	95%	98%	$0.07	65	65
Utah	Restaurant	Lighting Interior Other	Lighting Package, High Efficiency	14% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,966	13	$5,407	100%	N/A	$0.14	2,471	2,477
Utah	Restaurant	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,928	8	$503	5.0%	64%	$0.02	44	44
Utah	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	24,715	4	$231	85%	N/A	$0.00	0.00	2,683
Utah	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	21,619	1	$152	100%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,686	1	$119	100%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	24,921	12	$2,864	15%	N/A	$0.01	900	5,066

Table C-2.2. Commercial Measure Details

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Utah	Restaurant	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,295	8	$503	5.0%	64%	$0.03	75	75
Utah	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.51	10%	90%	$0.02	0.73	0.73
Utah	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	131	4	$0.00	10%	45%	$0.00	25	25
Utah	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	71	10	$0.35	95%	75%	$0.00	217	217
Utah	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	704	10	$498	95%	86%	$0.05	2,439	2,439
Utah	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$0.41	5.0%	86%	$0.00	1	1
Utah	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	55	4	$11	60%	90%	$0.02	126	126
Utah	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.51	10%	90%	$0.02	0.14	0.14
Utah	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	131	4	$0.00	10%	45%	$0.00	5	5
Utah	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	71	10	$0.35	95%	75%	$0.00	43	43
Utah	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	704	10	$498	95%	86%	$0.05	489	489
Utah	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$0.41	5.0%	86%	$0.00	0.24	0.24
Utah	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	55	4	$11	60%	90%	$0.02	25	25
Utah	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	267	6	$291	100%	N/A	$0.08	33	33
Utah	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	267	6	$291	100%	N/A	$0.08	10	10
Utah	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	14	6	$1	100%	N/A	$0.01	5	5
Utah	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	14	6	$1	100%	N/A	$0.01	0.00	0.00
Utah	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	1,082	8	$92	25%	45%	$0.01	399	399
Utah	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	1,795	15	$436	10%	76%	$0.02	446	446
Utah	Restaurant	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	1,240	15	$134	10%	90%	$0.01	365	365
Utah	Restaurant	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	92	15	$60	10%	90%	$0.05	27	27
Utah	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,214	10	$1,007	10%	80%	$0.06	318	318
Utah	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,648	10	$1,365	10%	80%	$0.06	432	432
Utah	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	321	10	$3,300	5.0%	68%	$0.79	34	34
Utah	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	178	8	$17	1.0%	95%	$0.01	5	5
Utah	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	192	12	$181	95%	77%	$0.07	457	457
Utah	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	446	5	$71	30%	85%	$0.01	361	361

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Utah	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	1,504	3	$236	10%	85%	$0.01	405	405
Utah	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	151	12	$-35.48929	95%	81%	$0.04	380	380
Utah	Restaurant	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	680	13	$97	10%	90%	$0.01	191	191
Utah	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	274	4	$198	5.0%	20%	$0.06	8	8
Utah	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	34	10	$6	2.5%	85%	$0.01	2	2
Utah	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	181	15	$201	35%	95%	$0.09	197	197
Utah	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	155	15	$140	35%	95%	$0.07	161	161
Utah	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	1,082	8	$92	25%	45%	$0.01	80	80
Utah	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	1,795	15	$436	10%	76%	$0.02	86	86
Utah	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	1,214	10	$1,007	10%	80%	$0.06	63	63
Utah	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	1,648	10	$1,365	10%	80%	$0.06	86	86
Utah	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	321	10	$3,300	5.0%	68%	$0.79	6	6
Utah	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	178	8	$17	1.0%	95%	$0.01	1	1
Utah	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	192	12	$181	95%	77%	$0.07	91	91
Utah	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	446	5	$71	30%	85%	$0.01	72	72
Utah	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	752	3	$91	5.0%	90%	$0.01	21	21
Utah	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	151	12	$-35.48929	95%	81%	$0.04	76	76
Utah	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	274	4	$198	5.0%	20%	$0.06	1	1
Utah	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	34	10	$6	2.5%	85%	$0.01	0.48	0.48
Utah	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	181	15	$201	35%	95%	$0.09	38	38
Utah	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	155	15	$140	35%	95%	$0.07	31	31
Utah	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	302	20	$824	100%	N/A	$0.21	0.00	0.00
Utah	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	339	20	$1,104	100%	N/A	$0.25	362	438
Utah	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	266	20	$64	100%	N/A	$0.02	0.00	0.00
Utah	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	84	20	$29	100%	N/A	$0.03	0.00	0.00
Utah	Restaurant	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,119	20	$212	8.8%	100%	$0.01	588	588

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Utah	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	302	20	$824	100%	N/A	$0.21	0.00	0.00
Utah	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	339	20	$1,104	100%	N/A	$0.25	185	194
Utah	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	266	20	$64	100%	N/A	$0.02	0.00	0.00
Utah	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	84	20	$29	100%	N/A	$0.03	0.00	0.00
Utah	Restaurant	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	257	18	$660	45%	65%	$0.08	86	86
Utah	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,542	14	$4,730	5.0%	94%	$0.24	82	82
Utah	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	462	12	$5,450	65%	75%	$0.37	256	256
Utah	Restaurant	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,028	12	$112	40%	39%	$0.00	176	176
Utah	Restaurant	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,197	25	$1,448	45%	58%	$0.09	341	341
Utah	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	256	25	$696	25%	85%	$0.20	57	57
Utah	Restaurant	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	308	20	$478	45%	58%	$0.05	84	84
Utah	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	185	20	$83	45%	85%	$0.01	74	74
Utah	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,473	25	$2,585	15%	82%	$0.08	316	316
Utah	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	460	25	$797	15%	90%	$0.13	62	62
Utah	Restaurant	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$664	10%	85%	.	0.00	0.00
Utah	Restaurant	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,355	10%	68%	.	0.00	0.00
Utah	Restaurant	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,285	7	$542	90%	85%	$0.01	987	987
Utah	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,664	25	$3	15%	90%	$0.00	203	203
Utah	Restaurant	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,427	25	$163	15%	75%	$0.00	142	142
Utah	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	721	14	$4,730	5.0%	94%	$0.50	7	7
Utah	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	216	12	$5,450	65%	75%	$0.70	24	24
Utah	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	119	25	$696	75%	85%	$0.44	12	12
Utah	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	86	20	$83	45%	85%	$0.03	5	5
Utah	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	215	25	$797	35%	90%	$0.28	10	10
Utah	Restaurant	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	481	15	$2,750	10%	75%	$0.16	7	7
Utah	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	778	25	$3	80%	90%	$0.00	104	104
Utah	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,865	18	$6,250	95%	25%	$0.26	1,887	1,887
Utah	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	116	15	$18	95%	76%	$0.01	344	344

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Utah	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,924	20	$306	55%	45%	$0.01	2,943	2,943
Utah	Restaurant	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	48	7	$13	65%	25%	$0.02	0.00	0.00
Utah	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,865	18	$6,250	95%	25%	$0.26	369	369
Utah	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	115	15	$18	95%	76%	$0.01	68	68
Utah	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,896	20	$306	55%	45%	$0.01	437	437
Utah	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	13,281	15	$564	75%	N/A	$0.00	3	64
Utah	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	13,137	15	$337	75%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	13,281	15	$564	75%	N/A	$0.00	0.83	13
Utah	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	13,137	15	$337	75%	N/A	$0.00	0.00	0.00
Utah	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,114	10	$763	75%	94%	$0.05	25	25
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	20%	35%	$0.21	0.00	0.00
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	20%	35%	$0.05	0.01	0.01
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	20%	55%	$0.23	0.00	0.01
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	20%	55%	$0.22	0.08	0.10
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,909	12	$1,654	75%	95%	$0.04	67	83
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	75%	94%	$0.05	60	75
Utah	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,456	25	$1,400	2.5%	100%	$0.02	2	2
Utah	Restaurant	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	222	12	$44	80%	90%	$0.02	4	4
Utah	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	354	9	$19	95%	25%	$0.00	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.02	5	5
Utah	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	557	10	$269	75%	95%	$0.04	12	12
Utah	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,540	10	$1,006	45%	94%	$0.03	26	26
Utah	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,104	10	$763	75%	94%	$0.05	3	3
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	20%	35%	$0.21	0.00	0.00
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	20%	35%	$0.05	0.00	0.00
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	20%	55%	$0.23	0.00	0.00
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	20%	55%	$0.22	0.01	0.01
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	75%	95%	$0.04	10	10
Utah	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	75%	94%	$0.05	9	9
Utah	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,416	25	$1,120	2.5%	100%	$0.02	0.15	0.15
Utah	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	351	9	$0.13	95%	25%	$0.00	0.42	0.42
Utah	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.02	0.91	0.91
Utah	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	552	10	$269	75%	95%	$0.04	2	2
Utah	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,517	10	$1,006	45%	94%	$0.03	4	4
Utah	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12,096	15	$2,897	75%	N/A	$0.02	2,988	3,576
Utah	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	725	15	$126	100%	N/A	$0.01	0.00	0.00
Utah	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	12,096	15	$2,897	75%	N/A	$0.02	749	783
Utah	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	725	15	$126	100%	N/A	$0.01	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,139	10	$763	75%	94%	$0.05	343	343
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	75%	35%	$0.21	0.00	0.21
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	75%	35%	$0.05	0.56	0.65
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	75%	55%	$0.23	0.00	0.58
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	75%	55%	$0.22	4	4
Utah	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,909	12	$1,654	85%	95%	$0.04	999	1,169
Utah	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	85%	95%	$0.05	916	1,072
Utah	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,557	25	$1,400	2.5%	100%	$0.02	37	37
Utah	Restaurant	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	227	12	$44	80%	90%	$0.02	53	53
Utah	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	362	9	$19	95%	25%	$0.00	36	36
Utah	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.02	76	76
Utah	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	569	10	$269	75%	95%	$0.04	173	173
Utah	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,597	10	$1,006	25%	94%	$0.03	190	190
Utah	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,107	10	$763	75%	94%	$0.05	58	58
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	75%	35%	$0.21	0.00	0.04
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	75%	35%	$0.05	0.09	0.09
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	75%	55%	$0.23	0.00	0.12
Utah	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	75%	55%	$0.22	0.70	0.70

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Utah	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	85%	95%	$0.04	168	168
Utah	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	85%	95%	$0.05	154	154
Utah	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,429	25	$1,120	2.5%	100%	$0.02	2	2
Utah	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	352	9	$0.13	95%	25%	$0.00	6	6
Utah	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.02	13	13
Utah	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	553	10	$269	75%	95%	$0.04	29	29
Utah	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,525	10	$1,006	25%	94%	$0.03	32	32
Utah	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	5,544	4	$633	100%	N/A	$0.01	2,098	2,444
Utah	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	8,554	4	$633	95%	30%	$0.01	5,698	5,698
Utah	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	5,544	4	$633	100%	N/A	$0.01	212	216
Utah	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	8,554	4	$633	95%	30%	$0.01	1,197	1,197
Utah	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	104	12	$17	90%	90%	$0.01	32	32
Utah	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	9	12	$24	35%	90%	$0.20	1	1
Utah	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	32	12	$7	95%	85%	$0.02	10	10
Utah	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	56	12	$32	26%	40%	$0.04	0.00	0.00
Utah	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	92	12	$59	75%	21%	$0.05	5	5
Utah	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	159	12	$89	14%	75%	$0.04	6	6
Utah	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	104	12	$17	90%	90%	$0.01	6	6
Utah	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	9	12	$24	35%	90%	$0.20	0.23	0.23
Utah	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	32	12	$7	95%	85%	$0.02	2	2
Utah	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	56	12	$32	26%	40%	$0.04	0.00	0.00
Utah	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	92	12	$59	75%	21%	$0.05	1	1
Utah	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	159	12	$89	14%	75%	$0.04	1	1

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Utah	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,738	15	$7,460	25%	94%	$0.33	199	199
Utah	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	217	5	$5,083	95%	81%	$1.80	79	79
Utah	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,313	10	$31,291	25%	70%	$1.83	108	108
Utah	School	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	869	15	$72,651	45%	90%	$6.42	163	163
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	3,925	20	$12,896	100%	N/A	$0.25	863	1,172
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	654	20	$2,149	100%	N/A	$0.25	0.00	0.00
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	2,398	20	$7,880	100%	N/A	$0.25	0.00	0.00
Utah	School	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,214	15	$90,718	15%	67%	$1.34	240	240
Utah	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,738	15	$6,879	65%	98%	$0.30	489	489
Utah	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,390	7	$3,868	10%	94%	$0.21	54	54
Utah	School	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	2,433	15	$346	65%	35%	$0.01	227	227
Utah	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	695	13	$2,799	75%	65%	$0.31	134	134
Utah	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,738	15	$5,222	75%	76%	$0.23	385	385
Utah	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	782	12	$5,450	25%	75%	$0.54	53	53
Utah	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,738	40	$99,115	2.0%	**%	$8.80	0.00	0.00
Utah	School	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	869	12	$786	10%	39%	$0.07	12	12
Utah	School	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	67	25	$10,352	45%	69%	$11.85	7	7
Utah	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	6	25	$4,979	25%	85%	$63.36	0.46	0.46
Utah	School	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,476	15%	82%	.	0.00	0.00
Utah	School	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$5,700	15%	90%	.	0.00	0.00
Utah	School	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$4,748	10%	85%	.	0.00	0.00
Utah	School	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,424	10%	73%	.	0.00	0.00
Utah	School	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (UT State Code)	No Insulation	Per Building	Existing	260	15	$613	65%	45%	$0.18	27	27
Utah	School	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,172	7	$5,883	90%	85%	$0.21	603	603

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Utah	School	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	5,742	10	$6,937	35%	68%	$0.09	447	447
Utah	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,812	25	$27	15%	90%	$0.00	114	114
Utah	School	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,411	25	$1,147	15%	64%	$0.04	68	68
Utah	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,205	15	$3,978	25%	94%	$0.25	26	26
Utah	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	150	5	$5,083	95%	81%	$2.59	10	10
Utah	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	911	10	$28,162	25%	70%	$2.37	14	14
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	3,205	20	$11,606	100%	N/A	$0.28	249	253
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	534	20	$1,934	100%	N/A	$0.28	0.00	0.00
Utah	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	1,958	20	$7,092	100%	N/A	$0.28	0.00	0.00
Utah	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,205	15	$6,879	65%	98%	$0.44	67	67
Utah	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	964	7	$3,481	10%	94%	$0.28	7	7
Utah	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	482	13	$2,519	75%	65%	$0.40	19	19
Utah	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,205	15	$5,222	75%	76%	$0.33	56	56
Utah	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	542	12	$5,450	25%	75%	$0.77	7	7
Utah	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,205	40	$99,115	2.0%	**%	$12.69	0.00	0.00
Utah	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	4	25	$4,979	75%	85%	$91.35	0.15	0.15
Utah	School	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,205	15	$29,841	10%	75%	$1.90	6	6
Utah	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,950	25	$27	80%	90%	$0.00	93	93
Utah	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	1,009	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	1,935	15	$3,166	100%	N/A	$0.13	0.00	0.00
Utah	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	13,006	15	$-68038.953	25%	N/A	$0.07	251	362

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	771	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	1,479	15	$2,532	100%	N/A	$0.13	0.00	0.00
Utah	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	9,940	15	$-50830.023	25%	N/A	$0.09	58	60
Utah	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,211	15	$7,460	25%	94%	$0.26	508	508
Utah	School	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	6,633	15	$90,718	15%	67%	$1.05	640	640
Utah	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,211	15	$6,879	65%	98%	$0.24	1,303	1,303
Utah	School	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	3,316	10	$22,560	10%	60%	$0.52	172	172
Utah	School	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	2,211	5	$6,366	95%	72%	$0.22	1,303	1,303
Utah	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	5,527	15	$62,169	50%	94%	$0.86	2,079	2,079
Utah	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,211	15	$5,222	75%	76%	$0.18	886	886
Utah	School	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	552	18	$7,161	45%	65%	$1.00	108	108
Utah	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	995	12	$5,450	25%	75%	$0.42	123	123
Utah	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,211	40	$99,115	2.0%	**%	$6.92	0.00	0.00
Utah	School	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,105	12	$786	10%	39%	$0.05	28	28
Utah	School	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	85	25	$10,352	45%	69%	$9.31	17	17
Utah	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	7	25	$4,979	25%	85%	$49.80	1	1
Utah	School	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	663	20	$5,191	45%	62%	$0.60	121	121
Utah	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	398	20	$910	45%	85%	$0.18	98	98
Utah	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,476	15%	82%	.	0.00	0.00
Utah	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$5,700	15%	90%	.	0.00	0.00
Utah	School	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$4,748	10%	85%	.	0.00	0.00
Utah	School	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,424	10%	73%	.	0.00	0.00
Utah	School	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,763	7	$5,883	90%	85%	$0.16	1,364	1,364
Utah	School	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	5,742	10	$6,937	35%	68%	$0.09	794	794

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	3,577	25	$27	15%	90%	$0.00	263	263
Utah	School	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,068	25	$1,147	15%	64%	$0.03	156	156
Utah	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,572	15	$3,978	25%	94%	$0.19	74	74
Utah	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,572	15	$6,879	65%	98%	$0.34	190	190
Utah	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	3,930	15	$62,169	50%	94%	$1.22	329	329
Utah	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,572	15	$5,222	75%	76%	$0.26	144	144
Utah	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	707	12	$5,450	25%	75%	$0.59	20	20
Utah	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,572	40	$99,115	2.0%	**%	$9.73	0.00	0.00
Utah	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	5	25	$4,979	75%	85%	$70.05	0.38	0.38
Utah	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	282	20	$910	45%	85%	$0.25	12	12
Utah	School	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,572	15	$29,841	10%	75%	$1.46	17	17
Utah	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,543	25	$27	80%	90%	$0.00	238	238
Utah	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	140	6	$3	100%	N/A	$0.00	337	337
Utah	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	140	6	$3	100%	N/A	$0.00	68	68
Utah	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	749	4	$844	100%	N/A	$0.09	100	100
Utah	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	749	4	$844	100%	N/A	$0.09	136	136
Utah	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	9	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	26	20	$0.71	100%	N/A	$0.00	0.00	1
Utah	School	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	185	20	$25	8.8%	100%	$0.01	37	37
Utah	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	9	20	$1	100%	N/A	$0.01	0.00	0.00
Utah	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	26	20	$0.71	100%	N/A	$0.00	0.00	0.82
Utah	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	3,856	15	$12,940	100%	N/A	$0.26	0.00	0.00
Utah	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,378	15	$7,460	25%	94%	$0.24	0.00	0.00
Utah	School	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	18,113	15	$90,718	15%	67%	$0.38	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,378	15	$6,879	65%	98%	$0.22	0.00	0.00
Utah	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	6,037	15	$5,222	75%	76%	$0.07	0.00	0.00
Utah	School	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,509	18	$7,161	45%	65%	$0.36	0.00	0.00
Utah	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,488	14	$27,066	5.0%	94%	$0.38	0.00	0.00
Utah	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,716	12	$5,450	25%	75%	$0.15	0.00	0.00
Utah	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,378	40	$99,115	2.0%	**%	$6.43	0.00	0.00
Utah	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	15,211	30	$1,553	5.0%	N/A	$4.05	0.00	0.00
Utah	School	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,528	12	$786	10%	39%	$0.01	0.00	0.00
Utah	School	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,205	25	$10,352	45%	69%	$0.11	0.00	0.00
Utah	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	915	25	$4,979	25%	85%	$0.42	0.00	0.00
Utah	School	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	1,811	20	$5,191	45%	62%	$0.22	0.00	0.00
Utah	School	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	1,086	20	$910	45%	85%	$0.06	0.00	0.00
Utah	School	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	9,757	25	$18,476	15%	82%	$0.15	0.00	0.00
Utah	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	1,901	25	$5,700	15%	90%	$0.23	0.00	0.00
Utah	School	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$4,748	10%	85%	.	0.00	0.00
Utah	School	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,424	10%	73%	.	0.00	0.00
Utah	School	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	7,547	7	$5,883	90%	85%	$0.06	0.00	0.00
Utah	School	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	5,742	10	$6,937	35%	68%	$0.09	0.00	0.00
Utah	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	9,769	25	$27	15%	90%	$0.00	0.00	0.00
Utah	School	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	8,378	25	$1,147	15%	64%	$0.01	0.00	0.00
Utah	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	3,459	15	$10,352	100%	N/A	$0.23	0.00	0.00
Utah	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,031	15	$3,978	25%	94%	$0.15	0.00	0.00
Utah	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,031	15	$6,879	65%	98%	$0.26	0.00	0.00
Utah	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	5,155	15	$5,222	75%	76%	$0.08	0.00	0.00
Utah	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,687	14	$27,066	5.0%	94%	$0.44	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	2,320	12	$5,450	25%	75%	$0.18	0.00	0.00
Utah	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,031	40	$99,115	2.0%	**%	$7.53	0.00	0.00
Utah	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	13,436	30	$12,241	5.0%	N/A	$2.36	0.00	0.00
Utah	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	781	25	$4,979	75%	85%	$0.49	0.00	0.00
Utah	School	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	928	20	$910	45%	85%	$0.08	0.00	0.00
Utah	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	1,623	25	$5,700	35%	90%	$0.27	0.00	0.00
Utah	School	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	5,155	15	$29,841	10%	75%	$0.44	0.00	0.00
Utah	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	8,342	25	$27	80%	90%	$0.00	0.00	0.00
Utah	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	2,795	8	$777	5.0%	95%	$0.02	370	370
Utah	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	4,915	8	$953	75%	70%	$0.01	7,180	7,180
Utah	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	4,082	15	$5,516	62%	90%	$0.10	6,353	6,353
Utah	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,428	8	$5,459	90%	35%	$0.29	981	981
Utah	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	26	13	$39	75%	95%	$0.11	52	52
Utah	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	27,185	17	$18,471	5.0%	95%	$0.05	3,601	3,601
Utah	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	2,795	8	$777	5.0%	95%	$0.02	74	74
Utah	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	4,915	8	$953	75%	70%	$0.01	1,440	1,440
Utah	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	4,082	15	$5,516	62%	90%	$0.10	1,274	1,274
Utah	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,428	8	$5,459	90%	35%	$0.29	196	196
Utah	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	26	13	$39	75%	95%	$0.11	10	10
Utah	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	27,185	17	$18,471	5.0%	95%	$0.05	657	657
Utah	School	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,840	10	$2,484	10%	95%	$0.10	430	430
Utah	School	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	5,015	8	$11,215	30%	81%	$0.17	3,006	3,006
Utah	School	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,761	8	$8,411	30%	81%	$0.17	0.00	0.00
Utah	School	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	462	6	$171	10%	80%	$0.03	90	90

Table C-2.2. Commercial Measure Details

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Utah	School	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	283	6	$143	10%	80%	$0.04	55	55
Utah	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,317	13	$2,941	100%	N/A	$0.05	0.00	0.00
Utah	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	7,423	13	$11,014	100%	N/A	$0.11	12,034	12,262
Utah	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	14,247	13	$87,365	25%	N/A	$0.47	7,698	7,844
Utah	School	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	5,798	8	$5,459	75%	35%	$0.07	3,694	3,694
Utah	School	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,735	15	$1,300	100%	N/A	$0.06	0.00	0.00
Utah	School	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,137	15	$5,254	95%	N/A	$0.19	2,173	2,193
Utah	School	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,910	29	$37,715	50%	N/A	$1.52	74	75
Utah	School	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,211	19	$77	25%	N/A	$0.00	0.00	0.00
Utah	School	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	594	15	$23,924	100%	N/A	$3.09	0.00	0.00
Utah	School	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	584	8	$5,459	75%	35%	$0.72	393	393
Utah	School	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	263	11	$102	95%	50%	$0.03	348	348
Utah	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	52	13	$45	95%	98%	$0.07	136	136
Utah	School	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,839	10	$2,484	10%	95%	$0.10	90	90
Utah	School	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,340	8	$11,215	30%	81%	$0.20	549	549
Utah	School	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,255	8	$8,411	30%	81%	$0.20	0.00	0.00
Utah	School	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	357	6	$87	10%	80%	$0.02	14	14
Utah	School	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	161	6	$62	10%	80%	$0.03	6	6
Utah	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	52	13	$45	95%	98%	$0.07	25	25

Table C-2.2. Commercial Measure Details

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Utah	School	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	6,437	13	$16,396	100%	N/A	$0.20	3,491	3,500
Utah	School	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	5,793	8	$5,459	75%	35%	$0.07	781	781
Utah	School	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,249	4	$144	85%	N/A	$0.00	0.00	374
Utah	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,215	1	$95	100%	N/A	$0.00	0.00	0.00
Utah	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,883	1	$75	100%	N/A	$0.00	0.00	0.00
Utah	School	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,318	12	$1,794	15%	N/A	$0.02	180	967
Utah	School	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	277	8	$5,459	75%	35%	$1.51	93	93
Utah	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.86	10%	90%	$0.02	0.80	0.80
Utah	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	216	4	$0.00	75%	45%	$0.00	204	204
Utah	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	31	10	$0.15	95%	75%	$0.00	61	61
Utah	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	621	10	$439	95%	86%	$0.05	1,408	1,408
Utah	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$4	5.0%	86%	$0.03	1	1
Utah	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	994	4	$198	60%	90%	$0.02	1,498	1,498
Utah	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.86	10%	90%	$0.02	0.16	0.16
Utah	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	216	4	$0.00	75%	45%	$0.00	40	40
Utah	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	31	10	$0.15	95%	75%	$0.00	12	12
Utah	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	621	10	$439	95%	86%	$0.05	282	282
Utah	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$4	5.0%	86%	$0.03	0.26	0.26
Utah	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	994	4	$198	60%	90%	$0.02	300	300
Utah	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	439	6	$478	100%	N/A	$0.08	35	35
Utah	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	439	6	$478	100%	N/A	$0.08	10	10
Utah	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	633	6	$73	100%	N/A	$0.01	158	158
Utah	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	633	6	$73	100%	N/A	$0.01	0.03	0.03
Utah	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	541	8	$46	15%	45%	$0.01	35	35
Utah	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	898	15	$218	5.0%	76%	$0.02	33	33

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Utah	School	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	620	15	$67	5.0%	90%	$0.01	27	27
Utah	School	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	46	15	$30	5.0%	90%	$0.05	2	2
Utah	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	607	10	$504	25%	80%	$0.06	118	118
Utah	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	825	10	$683	25%	80%	$0.06	161	161
Utah	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	161	10	$3,300	5.0%	68%	$1.57	5	5
Utah	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	89	8	$8	1.0%	95%	$0.01	0.82	0.82
Utah	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	8	12	$8	95%	77%	$0.07	6	6
Utah	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	753	3	$118	10%	85%	$0.01	60	60
Utah	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	6	12	$-1.6370899	95%	81%	$0.04	5	5
Utah	School	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	340	13	$48	25%	90%	$0.01	71	71
Utah	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	12	4	$9	95%	20%	$0.06	2	2
Utah	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	17	10	$3	2.5%	85%	$0.01	0.35	0.35
Utah	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	90	15	$100	10%	95%	$0.09	8	8
Utah	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	7	15	$6	10%	95%	$0.07	0.63	0.63
Utah	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	541	8	$46	15%	45%	$0.01	7	7
Utah	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	898	15	$218	5.0%	76%	$0.02	6	6
Utah	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	607	10	$504	25%	80%	$0.06	23	23
Utah	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	825	10	$683	25%	80%	$0.06	32	32
Utah	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	161	10	$3,300	5.0%	68%	$1.57	1	1
Utah	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	89	8	$8	1.0%	95%	$0.01	0.16	0.16
Utah	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	8	12	$8	95%	77%	$0.07	1	1
Utah	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	376	3	$45	5.0%	90%	$0.01	3	3
Utah	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	6	12	$-1.6370899	95%	81%	$0.04	1	1
Utah	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	12	4	$9	95%	20%	$0.06	0.45	0.45
Utah	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	17	10	$3	2.5%	85%	$0.01	0.07	0.07

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Utah	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	90	15	$100	10%	95%	$0.09	1	1
Utah	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	7	15	$6	10%	95%	$0.07	0.12	0.12
Utah	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	331	20	$901	100%	N/A	$0.21	0.00	0.00
Utah	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	371	20	$1,208	100%	N/A	$0.25	259	314
Utah	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	291	20	$70	100%	N/A	$0.02	0.00	0.00
Utah	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	92	20	$32	100%	N/A	$0.03	0.00	0.00
Utah	School	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,317	20	$232	8.8%	100%	$0.01	421	421
Utah	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	331	20	$901	100%	N/A	$0.21	0.00	0.00
Utah	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	371	20	$1,208	100%	N/A	$0.25	133	138
Utah	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	291	20	$70	100%	N/A	$0.02	0.00	0.00
Utah	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	92	20	$32	100%	N/A	$0.03	0.00	0.00
Utah	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	200	9	$26	100%	N/A	$0.01	454	466
Utah	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	689	4	$2,584	10%	50%	$0.29	76	76
Utah	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	200	9	$26	100%	N/A	$0.01	97	97
Utah	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	686	4	$2,584	10%	50%	$0.29	14	14
Utah	School	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	97,313	15	$90,718	15%	67%	$0.07	0.00	0.00
Utah	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	32,437	15	$5,222	75%	76%	$0.01	0.00	0.00
Utah	School	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	8,109	18	$7,161	45%	65%	$0.07	0.00	0.00
Utah	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	48,656	14	$27,066	5.0%	94%	$0.04	0.00	0.00
Utah	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	14,596	12	$5,450	25%	75%	$0.03	0.00	0.00
Utah	School	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	32,437	12	$786	10%	39%	$0.00	0.00	0.00
Utah	School	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	63,818	25	$10,352	45%	69%	$0.01	0.00	0.00
Utah	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	8,086	25	$4,979	25%	85%	$0.05	0.00	0.00
Utah	School	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	9,731	20	$5,191	45%	62%	$0.04	0.00	0.00
Utah	School	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	5,838	20	$910	45%	85%	$0.01	0.00	0.00
Utah	School	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	78,001	25	$18,476	15%	82%	$0.02	0.00	0.00
Utah	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	14,519	25	$5,700	15%	90%	$0.03	0.00	0.00
Utah	School	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$4,748	10%	85%	.	0.00	0.00
Utah	School	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,424	10%	73%	.	0.00	0.00
Utah	School	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	40,547	7	$5,883	90%	85%	$0.01	0.00	0.00

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Utah	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	52,486	25	$27	15%	90%	$0.00	0.00	0.00
Utah	School	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	45,015	25	$1,147	15%	64%	$0.00	0.00	0.00
Utah	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	19,009	15	$5,222	75%	76%	$0.02	0.00	0.00
Utah	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	28,513	14	$27,066	5.0%	94%	$0.07	0.00	0.00
Utah	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	8,554	12	$5,450	25%	75%	$0.05	0.00	0.00
Utah	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	4,738	25	$4,979	75%	85%	$0.08	0.00	0.00
Utah	School	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	3,421	20	$910	45%	85%	$0.02	0.00	0.00
Utah	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	8,508	25	$5,700	35%	90%	$0.05	0.00	0.00
Utah	School	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	19,009	15	$29,841	10%	75%	$0.12	0.00	0.00
Utah	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	30,758	25	$27	80%	90%	$0.00	0.00	0.00
Utah	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,007	10	$138	100%	N/A	$0.01	1,315	1,315
Utah	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,007	10	$138	100%	N/A	$0.01	292	292
Utah	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	11,339	10	$3,658	5.0%	90%	$0.02	1,423	1,423
Utah	School	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	17,009	15	$90,718	15%	67%	$0.41	4,758	4,758
Utah	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,700	95%	85%	$0.19	2,520	2,520
Utah	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	578	15	$197	95%	76%	$0.03	1,096	1,096
Utah	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	14,458	20	$3,322	55%	45%	$0.02	9,361	9,361
Utah	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	2,976	15	$10,897	11%	77%	$0.28	613	613
Utah	School	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	526	7	$149	65%	25%	$0.02	0.00	0.00
Utah	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	907	18	$1,705	65%	59%	$0.14	975	975
Utah	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	9,012	10	$3,658	5.0%	90%	$0.03	226	226
Utah	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,700	95%	85%	$0.19	493	493

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	22,381	50	$74,603	15%	98%	$0.26	1,269	1,269
Utah	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	459	15	$197	95%	76%	$0.03	167	167
Utah	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	11,490	20	$3,322	55%	45%	$0.02	1,066	1,066
Utah	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	2,365	15	$10,897	11%	77%	$0.35	93	93
Utah	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	720	18	$1,705	63%	59%	$0.18	145	145
Utah	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	25,088	15	$1,692	75%	N/A	$0.01	4	79
Utah	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	24,816	15	$1,011	75%	N/A	$0.00	0.00	0.00
Utah	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	25,088	15	$1,692	75%	N/A	$0.01	1	18
Utah	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	24,816	15	$1,011	75%	N/A	$0.00	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.03	1	1
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.05	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.06	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.04	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.06	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.07	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.05	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.04	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	2,104	10	$8,289	55%	94%	$0.30	22	22
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	30	12	$85	20%	35%	$0.21	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	6	12	$3	20%	35%	$0.05	0.00	0.01
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	53	12	$164	20%	55%	$0.23	0.00	0.01
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	29	12	$82	20%	55%	$0.22	0.06	0.07
Utah	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$235	70%	95%	$0.04	5	7
Utah	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	380	12	$235	70%	94%	$0.05	5	6
Utah	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	8,418	25	$4,200	2.5%	100%	$0.04	4	4
Utah	School	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	420	12	$133	80%	8%	$0.02	0.54	0.54
Utah	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	669	9	$28	95%	25%	$0.00	3	3
Utah	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.02	10	10
Utah	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	3	3
Utah	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	2	2
Utah	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	1,052	10	$392	75%	75%	$0.03	12	12
Utah	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	4,798	10	$503	25%	94%	$0.01	21	21
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.03	0.17	0.17
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.05	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.06	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.04	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.06	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.07	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.05	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.05	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.04	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	2,085	10	$8,289	55%	94%	$0.31	3	3
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	30	12	$85	20%	35%	$0.21	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	6	12	$3	20%	35%	$0.05	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	53	12	$164	20%	55%	$0.23	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	29	12	$82	20%	55%	$0.22	0.00	0.00
Utah	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$235	70%	95%	$0.04	0.91	0.91
Utah	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	380	12	$235	70%	94%	$0.05	0.82	0.82
Utah	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	8,342	25	$3,360	2.5%	100%	$0.03	0.22	0.22
Utah	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	663	9	$0.20	95%	25%	$0.00	0.52	0.52

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Utah	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.02	1	1
Utah	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	0.51	0.51
Utah	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	1,042	10	$392	75%	75%	$0.03	1	1
Utah	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	4,755	10	$503	25%	94%	$0.01	3	3
Utah	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	22,849	15	$8,692	75%	N/A	$0.03	4,442	4,702
Utah	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,371	15	$379	100%	N/A	$0.02	0.00	0.00
Utah	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	22,849	15	$8,692	75%	N/A	$0.03	1,171	1,192
Utah	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,371	15	$379	100%	N/A	$0.02	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.03	14	17
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.06	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.04	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.06	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.07	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.04	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	2,152	10	$8,289	25%	94%	$0.30	140	140
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	30	12	$85	75%	35%	$0.21	0.00	0.16
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	6	12	$3	75%	35%	$0.05	0.42	0.49
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	53	12	$164	75%	55%	$0.23	0.00	0.44
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	29	12	$82	75%	55%	$0.22	3	3
Utah	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$235	75%	95%	$0.04	81	95
Utah	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	380	12	$235	75%	95%	$0.05	74	87
Utah	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	8,608	25	$4,200	2.5%	100%	$0.04	58	58
Utah	School	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	430	12	$133	80%	8%	$0.02	7	7
Utah	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	684	9	$28	95%	25%	$0.00	45	45
Utah	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.02	132	132
Utah	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	43	43
Utah	School	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	29	29
Utah	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	1,076	10	$392	75%	75%	$0.03	168	168
Utah	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	4,906	10	$503	25%	94%	$0.01	298	298
Utah	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.03	2	2
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.06	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.04	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.06	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.07	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.05	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.04	0.00	0.00
Utah	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	2,091	10	$8,289	25%	94%	$0.30	23	23
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	30	12	$85	75%	35%	$0.21	0.00	0.03
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	6	12	$3	75%	35%	$0.05	0.07	0.07
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	53	12	$164	75%	55%	$0.23	0.00	0.09
Utah	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	29	12	$82	75%	55%	$0.22	0.53	0.53
Utah	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$235	75%	95%	$0.04	14	14
Utah	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	380	12	$235	75%	95%	$0.05	13	13
Utah	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	8,367	25	$3,360	2.5%	100%	$0.03	3	3
Utah	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	665	9	$0.20	95%	25%	$0.00	7	7
Utah	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.02	22	22
Utah	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	7	7

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	1,045	10	$392	75%	75%	$0.03	28	28
Utah	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	4,769	10	$503	25%	94%	$0.01	50	50
Utah	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	408	4	$46	100%	N/A	$0.01	749	873
Utah	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	629	4	$46	95%	30%	$0.01	2,036	2,036
Utah	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	408	4	$46	100%	N/A	$0.01	75	77
Utah	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	629	4	$46	95%	30%	$0.01	427	427
Utah	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	154	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	394	15	$167	100%	N/A	$0.03	1,655	2,116
Utah	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	3,266	15	$-3508.6964	1.3%	N/A	$0.02	41	52
Utah	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	103	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	263	15	$134	100%	N/A	$0.04	313	322
Utah	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,184	15	$-2557.9941	1.3%	N/A	$0.03	7	8
Utah	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	641	15	$700	35%	98%	$0.08	1,818	1,818
Utah	Small Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	962	10	$1,046	10%	20%	$0.08	153	153
Utah	Small Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	641	5	$295	95%	72%	$0.04	3,503	3,503
Utah	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,604	15	$4,166	50%	94%	$0.20	5,589	5,589
Utah	Small Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	160	18	$480	45%	65%	$0.19	307	307
Utah	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	641	40	$20,260	2.0%	**%	$2.43	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	320	12	$64	40%	39%	$0.01	322	322
Utah	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	10	25	$1,053	45%	63%	$0.47	18	18
Utah	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2	25	$506	25%	85%	$1.05	3	3
Utah	Small Office	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	192	20	$347	45%	61%	$0.11	340	340
Utah	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	115	20	$61	45%	85%	$0.03	282	282

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Utah	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$1,880	15%	82%	.	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$580	15%	90%	.	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$483	10%	85%	.	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,621	10%	67%	.	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	802	7	$394	90%	85%	$0.03	3,901	3,901
Utah	Small Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	505	10	$572	35%	68%	$0.09	690	690
Utah	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,038	25	$2	15%	90%	$0.00	788	788
Utah	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	890	25	$94	15%	68%	$0.01	502	502
Utah	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	392	15	$700	35%	98%	$0.14	227	227
Utah	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	981	15	$4,166	50%	94%	$0.33	751	751
Utah	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	392	40	$20,260	2.0%	**%	$3.96	0.00	0.00
Utah	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	1	25	$506	75%	85%	$3.19	0.94	0.94
Utah	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	70	20	$61	45%	85%	$0.06	29	29
Utah	Small Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	392	15	$2,000	10%	75%	$0.35	42	42
Utah	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	635	25	$2	80%	90%	$0.00	582	582
Utah	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	11	6	$0.24	100%	N/A	$0.00	133	133
Utah	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	11	6	$0.24	100%	N/A	$0.00	26	26
Utah	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	55	4	$62	100%	N/A	$0.09	36	36
Utah	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	55	4	$62	100%	N/A	$0.09	48	48
Utah	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.17	100%	N/A	$0.01	0.00	0.00
Utah	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.08	100%	N/A	$0.00	0.00	0.63
Utah	Small Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	22	20	$3	8.8%	100%	$0.01	21	21
Utah	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.17	100%	N/A	$0.01	0.00	0.00
Utah	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.08	100%	N/A	$0.00	0.00	0.48
Utah	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	385	15	$623	100%	N/A	$0.12	0.00	0.00
Utah	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,050	15	$1,247	100%	N/A	$0.09	0.00	0.00
Utah	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	705	15	$700	35%	98%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	263	18	$480	45%	65%	$0.14	0.00	0.00
Utah	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	525	14	$3,440	5.0%	94%	$0.50	0.00	0.00
Utah	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	705	40	$20,260	2.0%	**%	$2.21	0.00	0.00
Utah	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,667	30	$36,976	5.0%	N/A	$1.06	0.00	0.00
Utah	Small Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	791	12	$64	40%	39%	$0.01	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	416	25	$1,053	45%	63%	$0.19	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	89	25	$506	25%	85%	$0.44	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	316	20	$347	45%	61%	$0.08	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	190	20	$61	45%	85%	$0.02	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	739	25	$1,880	15%	82%	$0.20	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	145	25	$580	15%	90%	$0.31	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$483	10%	85%	.	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,621	10%	67%	.	0.00	0.00
Utah	Small Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,319	7	$394	90%	85%	$0.02	0.00	0.00
Utah	Small Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	505	10	$572	35%	68%	$0.09	0.00	0.00
Utah	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,708	25	$2	15%	90%	$0.00	0.00	0.00
Utah	Small Office	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,465	25	$94	15%	68%	$0.00	0.00	0.00
Utah	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	208	15	$498	100%	N/A	$0.18	0.00	0.00
Utah	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	495	15	$997	100%	N/A	$0.15	0.00	0.00
Utah	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	338	15	$700	35%	98%	$0.16	0.00	0.00
Utah	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	252	14	$3,440	5.0%	94%	$1.05	0.00	0.00
Utah	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	338	40	$20,260	2.0%	**%	$4.59	0.00	0.00
Utah	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	1,487	30	$18,994	5.0%	N/A	$0.98	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	42	25	$506	75%	85%	$0.91	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	91	20	$61	45%	85%	$0.05	0.00	0.00
Utah	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	69	25	$580	35%	90%	$0.64	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	507	15	$2,000	10%	75%	$0.30	0.00	0.00
Utah	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	820	25	$2	80%	90%	$0.00	0.00	0.00
Utah	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	187	8	$52	5.0%	95%	$0.02	120	120
Utah	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	554	8	$304	75%	70%	$0.04	3,941	3,941
Utah	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	460	15	$622	62%	90%	$0.10	3,479	3,479
Utah	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	197	8	$365	90%	50%	$0.14	946	946
Utah	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	2	13	$3	75%	95%	$0.11	25	25
Utah	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	1,822	17	$1,238	5.0%	95%	$0.05	1,171	1,171
Utah	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	187	8	$52	5.0%	95%	$0.02	24	24
Utah	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	554	8	$304	75%	70%	$0.04	790	790
Utah	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	460	15	$622	62%	90%	$0.10	698	698
Utah	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	197	8	$365	90%	50%	$0.14	189	189
Utah	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	2	13	$3	75%	95%	$0.11	4	4
Utah	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	1,822	17	$1,238	5.0%	95%	$0.05	213	213
Utah	Small Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	134	10	$166	0.5%	95%	$0.10	7	7
Utah	Small Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,620	8	$2,000	30%	78%	$0.09	4,269	4,269
Utah	Small Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,215	8	$1,500	30%	78%	$0.09	0.00	0.00
Utah	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	257	13	$123	100%	N/A	$0.04	0.00	0.00
Utah	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	353	13	$597	100%	N/A	$0.13	2,648	2,782
Utah	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	783	13	$4,913	25%	N/A	$0.48	1,957	2,056
Utah	Small Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	516	8	$365	75%	50%	$0.05	2,076	2,076
Utah	Small Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	47	15	$28	100%	N/A	$0.05	0.00	0.00

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Utah	Small Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	58	15	$119	95%	N/A	$0.16	276	280
Utah	Small Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	51	25	$864	50%	N/A	$1.28	8	8
Utah	Small Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	33	17	$0.56	25%	N/A	$0.00	0.00	0.00
Utah	Small Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	16	15	$548	100%	N/A	$2.57	0.00	0.00
Utah	Small Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	18	8	$365	75%	50%	$1.49	89	89
Utah	Small Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	46	11	$18	95%	50%	$0.03	301	301
Utah	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.07	118	118
Utah	Small Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	120	10	$166	0.5%	95%	$0.11	1	1
Utah	Small Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,274	8	$2,000	30%	78%	$0.12	744	744
Utah	Small Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	955	8	$1,500	30%	78%	$0.12	0.00	0.00
Utah	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.07	21	21
Utah	Small Office	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	482	13	$717	100%	N/A	$0.11	1,206	1,215
Utah	Small Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	464	8	$365	75%	50%	$0.06	416	416
Utah	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,699	4	$25	85%	N/A	$0.00	0.00	487
Utah	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,486	1	$16	100%	N/A	$0.00	0.00	0.00
Utah	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	389	1	$13	100%	N/A	$0.00	0.00	0.00
Utah	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,714	12	$314	15%	N/A	$0.01	184	1,043
Utah	Small Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	72	8	$365	75%	50%	$0.39	164	164
Utah	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	4	7	$1	10%	90%	$0.02	4	4
Utah	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	17	4	$0.00	75%	45%	$0.00	80	80

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Utah	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	132	10	$0.65	95%	75%	$0.00	1,281	1,281
Utah	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	13	4	$0.30	5.0%	86%	$0.00	8	8
Utah	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	400	4	$80	60%	90%	$0.02	2,923	2,923
Utah	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	4	7	$1	10%	90%	$0.02	0.98	0.98
Utah	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	17	4	$0.00	75%	45%	$0.00	16	16
Utah	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	132	10	$0.65	95%	75%	$0.00	257	257
Utah	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	13	4	$0.30	5.0%	86%	$0.00	1	1
Utah	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	400	4	$80	60%	90%	$0.02	586	586
Utah	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	35	6	$39	100%	N/A	$0.08	14	14
Utah	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	35	6	$39	100%	N/A	$0.08	4	4
Utah	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	102	6	$11	100%	N/A	$0.01	124	124
Utah	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	102	6	$11	100%	N/A	$0.01	0.02	0.02
Utah	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	40	20	$108	100%	N/A	$0.21	0.00	0.00
Utah	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	44	20	$146	100%	N/A	$0.25	151	184
Utah	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	35	20	$8	100%	N/A	$0.02	0.00	0.00
Utah	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	11	20	$3	100%	N/A	$0.03	0.00	0.00
Utah	Small Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	280	20	$28	8.8%	100%	$0.01	246	246
Utah	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	40	20	$108	100%	N/A	$0.21	0.00	0.00
Utah	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	44	20	$146	100%	N/A	$0.25	78	81
Utah	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	35	20	$8	100%	N/A	$0.02	0.00	0.00
Utah	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	11	20	$3	100%	N/A	$0.03	0.00	0.00
Utah	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	35	9	$4	100%	N/A	$0.01	396	406
Utah	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	123	4	$464	10%	50%	$0.29	66	66
Utah	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	35	9	$4	100%	N/A	$0.01	84	84
Utah	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	123	4	$464	10%	50%	$0.29	13	13
Utah	Small Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	131	18	$480	45%	65%	$0.14	124	124
Utah	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	789	14	$3,440	5.0%	94%	$0.33	118	118
Utah	Small Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	526	12	$64	40%	39%	$0.01	258	258
Utah	Small Office	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	612	25	$1,053	45%	63%	$0.13	536	536

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Utah	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	131	25	$506	25%	85%	$0.29	83	83
Utah	Small Office	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	157	20	$347	45%	61%	$0.08	130	130
Utah	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	94	20	$61	45%	85%	$0.02	107	107
Utah	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,264	25	$1,880	15%	82%	$0.11	459	459
Utah	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	235	25	$580	15%	90%	$0.19	91	91
Utah	Small Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$483	10%	85%	.	0.00	0.00
Utah	Small Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,621	10%	67%	.	0.00	0.00
Utah	Small Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	657	7	$394	90%	85%	$0.02	1,437	1,437
Utah	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	851	25	$2	15%	90%	$0.00	295	295
Utah	Small Office	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	729	25	$94	15%	68%	$0.00	188	188
Utah	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	246	14	$3,440	5.0%	94%	$1.07	7	7
Utah	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	40	25	$506	75%	85%	$0.93	12	12
Utah	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	29	20	$61	45%	85%	$0.05	5	5
Utah	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	73	25	$580	35%	90%	$0.61	10	10
Utah	Small Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	164	15	$2,000	10%	75%	$0.32	7	7
Utah	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	265	25	$2	80%	90%	$0.00	101	101
Utah	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	68	10	$9	100%	N/A	$0.01	434	434
Utah	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	68	10	$9	100%	N/A	$0.01	96	96
Utah	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	45	15	$13	95%	76%	$0.02	439	439
Utah	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,127	20	$222	55%	45%	$0.02	3,747	3,747
Utah	Small Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	35	7	$10	65%	25%	$0.02	0.00	0.00
Utah	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	40	15	$13	95%	76%	$0.03	78	78
Utah	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,009	20	$222	55%	45%	$0.02	504	504
Utah	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	488	15	$241	75%	N/A	$0.04	0.51	8
Utah	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	483	15	$144	75%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	524	15	$241	75%	N/A	$0.04	0.14	2
Utah	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	519	15	$144	75%	N/A	$0.02	0.00	0.00
Utah	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	41	10	$555	55%	80%	$1.04	2	2
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	90%	35%	$0.21	0.00	0.01
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	90%	35%	$0.05	0.03	0.03
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	90%	55%	$0.23	0.00	0.03
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	90%	55%	$0.22	0.23	0.28
Utah	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	164	25	$800	2.5%	100%	$0.37	0.44	0.44
Utah	Small Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	30%	$0.24	0.21	0.21
Utah	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	13	9	$5	95%	25%	$0.03	0.34	0.34
Utah	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	20	10	$78	75%	85%	$0.29	1	1
Utah	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	43	10	$555	55%	80%	$0.98	0.33	0.33
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	90%	35%	$0.21	0.00	0.00
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	90%	35%	$0.05	0.00	0.00
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	90%	55%	$0.23	0.00	0.00
Utah	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	90%	55%	$0.22	0.03	0.03
Utah	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	174	25	$640	2.5%	100%	$0.28	0.02	0.02
Utah	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.04	95%	25%	$0.00	0.05	0.05
Utah	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	21	10	$78	75%	85%	$0.28	0.24	0.24

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	445	15	$1,241	75%	N/A	$0.21	473	488
Utah	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	26	15	$54	100%	N/A	$0.16	0.00	0.00
Utah	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	477	15	$1,241	75%	N/A	$0.20	135	137
Utah	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	28	15	$54	100%	N/A	$0.15	0.00	0.00
Utah	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	41	10	$555	25%	94%	$1.02	14	14
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	75%	35%	$0.21	0.00	0.12
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	75%	35%	$0.05	0.33	0.39
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	75%	55%	$0.23	0.00	0.35
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.22	2	2
Utah	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	167	25	$800	2.5%	100%	$0.37	6	6
Utah	Small Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	30%	$0.23	2	2
Utah	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	13	9	$5	95%	25%	$0.03	4	4
Utah	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	20	10	$78	75%	85%	$0.29	19	19
Utah	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	43	10	$555	25%	94%	$0.98	2	2
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	75%	35%	$0.21	0.00	0.02
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	75%	35%	$0.05	0.05	0.05
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	75%	55%	$0.23	0.00	0.07
Utah	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.22	0.42	0.42
Utah	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	175	25	$640	2.5%	100%	$0.28	0.37	0.37

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.04	95%	25%	$0.00	0.83	0.83
Utah	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	21	10	$78	75%	85%	$0.28	3	3
Utah	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	99	4	$11	100%	N/A	$0.01	43	43
Utah	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	99	4	$11	100%	N/A	$0.01	4	4
Utah	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	216	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	554	15	$367	100%	N/A	$0.05	0.00	0.00
Utah	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,588	15	$-7697.2027	67%	N/A	$0.02	199	260
Utah	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	160	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	410	15	$294	100%	N/A	$0.06	0.00	0.00
Utah	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,395	15	$-5611.5997	67%	N/A	$0.03	42	43
Utah	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	620	15	$945	80%	98%	$0.12	590	590
Utah	Small Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	930	10	$2,296	10%	80%	$0.19	83	83
Utah	Small Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	620	5	$648	95%	72%	$0.08	470	470
Utah	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,550	15	$5,625	50%	94%	$0.28	750	750
Utah	Small Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	155	18	$648	45%	65%	$0.30	41	41
Utah	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	620	40	$27,351	2.0%	**%	$3.39	0.00	0.00
Utah	Small Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	310	12	$75	10%	39%	$0.02	10	10
Utah	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	23	25	$1,422	45%	69%	$0.96	6	6
Utah	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2	25	$684	25%	85%	$3.89	0.41	0.41
Utah	Small Retail	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	186	20	$469	45%	62%	$0.18	47	47
Utah	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	111	20	$82	45%	85%	$0.05	38	38
Utah	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,538	15%	82%	.	0.00	0.00
Utah	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$783	15%	90%	.	0.00	0.00
Utah	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	73%	.	0.00	0.00
Utah	Small Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	775	7	$532	90%	85%	$0.05	526	526
Utah	Small Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	433	10	$666	35%	68%	$0.12	82	82
Utah	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,003	25	$2	15%	90%	$0.00	106	106
Utah	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	860	25	$110	15%	73%	$0.01	72	72
Utah	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	432	15	$945	80%	98%	$0.17	80	80
Utah	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,081	15	$5,625	50%	94%	$0.40	111	111
Utah	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	432	40	$27,351	2.0%	**%	$4.86	0.00	0.00
Utah	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	1	25	$684	75%	85%	$7.87	0.13	0.13
Utah	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	77	20	$82	45%	85%	$0.08	4	4
Utah	Small Retail	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	432	15	$2,700	10%	75%	$0.46	6	6
Utah	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	699	25	$2	80%	90%	$0.00	86	86
Utah	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	19	6	$0.41	100%	N/A	$0.00	44	44
Utah	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	19	6	$0.41	100%	N/A	$0.00	9	9
Utah	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	13	4	$15	100%	N/A	$0.09	1	1
Utah	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	13	4	$15	100%	N/A	$0.09	2	2
Utah	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
Utah	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.09	100%	N/A	$0.00	0.00	0.13
Utah	Small Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	23	20	$3	8.8%	100%	$0.01	4	4
Utah	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.18	100%	N/A	$0.01	0.00	0.00
Utah	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.09	100%	N/A	$0.00	0.00	0.10
Utah	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	570	15	$1,368	100%	N/A	$0.18	0.00	0.00
Utah	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,609	15	$2,736	100%	N/A	$0.13	0.00	0.00
Utah	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,007	15	$945	80%	98%	$0.07	0.00	0.00
Utah	Small Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	415	18	$648	45%	65%	$0.12	0.00	0.00
Utah	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	981	14	$4,644	5.0%	94%	$0.36	0.00	0.00

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Utah	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,007	40	$27,351	2.0%	**%	$2.09	0.00	0.00
Utah	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,925	30	$81,118	5.0%	N/A	$1.59	0.00	0.00
Utah	Small Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,246	12	$75	10%	39%	$0.00	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,311	25	$1,422	45%	69%	$0.08	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	165	25	$684	25%	85%	$0.32	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	498	20	$469	45%	62%	$0.07	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	299	20	$82	45%	85%	$0.02	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,508	25	$2,538	15%	82%	$0.13	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	295	25	$783	15%	90%	$0.20	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	73%	.	0.00	0.00
Utah	Small Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,077	7	$532	90%	85%	$0.02	0.00	0.00
Utah	Small Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	433	10	$666	35%	68%	$0.12	0.00	0.00
Utah	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	2,689	25	$2	15%	90%	$0.00	0.00	0.00
Utah	Small Retail	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,306	25	$110	15%	73%	$0.00	0.00	0.00
Utah	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	357	15	$1,094	100%	N/A	$0.24	0.00	0.00
Utah	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	914	15	$2,189	100%	N/A	$0.18	0.00	0.00
Utah	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	556	15	$945	80%	98%	$0.13	0.00	0.00
Utah	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	542	14	$4,644	5.0%	94%	$0.66	0.00	0.00
Utah	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	556	40	$27,351	2.0%	**%	$3.78	0.00	0.00
Utah	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,510	30	$41,668	5.0%	N/A	$1.28	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	91	25	$684	75%	85%	$0.57	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	165	20	$82	45%	85%	$0.04	0.00	0.00
Utah	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	163	25	$783	35%	90%	$0.37	0.00	0.00
Utah	Small Retail	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	917	15	$2,700	10%	75%	$0.23	0.00	0.00
Utah	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	1,485	25	$2	80%	90%	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	252	8	$70	5.0%	95%	$0.02	32	32
Utah	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	649	8	$353	75%	70%	$0.04	927	927
Utah	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	539	15	$728	62%	90%	$0.10	818	818
Utah	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	272	8	$493	45%	54%	$0.14	140	140
Utah	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	39	13	$58	75%	95%	$0.11	75	75
Utah	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,459	17	$1,671	5.0%	95%	$0.05	317	317
Utah	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	252	8	$70	5.0%	95%	$0.02	6	6
Utah	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	649	8	$353	75%	70%	$0.04	186	186
Utah	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	539	15	$728	62%	90%	$0.10	164	164
Utah	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	272	8	$493	45%	54%	$0.14	28	28
Utah	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	39	13	$58	75%	95%	$0.11	14	14
Utah	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,459	17	$1,671	5.0%	95%	$0.05	58	58
Utah	Small Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	314	10	$224	0.5%	95%	$0.05	3	3
Utah	Small Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,510	8	$2,700	30%	84%	$0.06	1,959	1,959
Utah	Small Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,632	8	$2,025	30%	84%	$0.06	0.00	0.00
Utah	Small Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	423	6	$157	2.5%	80%	$0.03	18	18
Utah	Small Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	317	6	$161	2.5%	80%	$0.04	14	14
Utah	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,194	13	$1,145	100%	N/A	$0.07	1,806	1,868
Utah	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	837	13	$407	100%	N/A	$0.04	0.00	0.00
Utah	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,993	13	$10,175	25%	N/A	$0.39	962	996
Utah	Small Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,430	8	$493	5.0%	54%	$0.03	80	80
Utah	Small Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	484	15	$187	100%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

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Utah	Small Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	595	15	$786	95%	N/A	$0.10	581	581
Utah	Small Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	531	16	$5,714	50%	N/A	$0.83	22	22
Utah	Small Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	338	11	$1	25%	N/A	$0.00	0.00	0.00
Utah	Small Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	168	15	$3,621	100%	N/A	$1.65	0.00	0.00
Utah	Small Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	225	8	$493	5.0%	54%	$0.17	15	15
Utah	Small Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	356	11	$138	95%	50%	$0.03	460	460
Utah	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	71	13	$61	95%	98%	$0.07	180	180
Utah	Small Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	378	10	$224	0.5%	95%	$0.05	0.87	0.87
Utah	Small Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,943	8	$2,700	30%	84%	$0.07	359	359
Utah	Small Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,207	8	$2,025	30%	84%	$0.07	0.00	0.00
Utah	Small Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	327	6	$80	2.5%	80%	$0.02	3	3
Utah	Small Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	180	6	$70	2.5%	80%	$0.03	1	1
Utah	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	71	13	$61	95%	98%	$0.07	32	32
Utah	Small Retail	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,081	13	$5,333	100%	N/A	$0.20	1,084	1,088
Utah	Small Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,722	8	$493	5.0%	54%	$0.02	21	21
Utah	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,070	4	$67	85%	N/A	$0.00	0.00	1,133
Utah	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,185	1	$44	100%	N/A	$0.00	0.00	0.00
Utah	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,663	1	$34	100%	N/A	$0.00	0.00	0.00
Utah	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,128	12	$842	15%	N/A	$0.01	182	1,196

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Utah	Small Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	436	8	$493	5.0%	54%	$0.09	11	11
Utah	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.67	10%	90%	$0.02	0.61	0.61
Utah	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	29	4	$0.00	10%	45%	$0.00	3	3
Utah	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	59	59
Utah	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.40	5.0%	86%	$0.00	0.99	0.99
Utah	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	54	4	$10	60%	90%	$0.02	79	79
Utah	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.67	10%	90%	$0.02	0.12	0.12
Utah	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	29	4	$0.00	10%	45%	$0.00	0.72	0.72
Utah	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	11	11
Utah	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.40	5.0%	86%	$0.00	0.19	0.19
Utah	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	54	4	$10	60%	90%	$0.02	15	15
Utah	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	59	6	$65	100%	N/A	$0.08	4	4
Utah	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	59	6	$65	100%	N/A	$0.08	1	1
Utah	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	38	6	$4	100%	N/A	$0.01	9	9
Utah	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	38	6	$4	100%	N/A	$0.01	0.00	0.00
Utah	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	42	20	$115	100%	N/A	$0.21	0.00	0.00
Utah	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$155	100%	N/A	$0.25	32	39
Utah	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	37	20	$9	100%	N/A	$0.02	0.00	0.00
Utah	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	11	20	$4	100%	N/A	$0.03	0.00	0.00
Utah	Small Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	298	20	$29	8.8%	100%	$0.01	52	52
Utah	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	42	20	$115	100%	N/A	$0.21	0.00	0.00
Utah	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$155	100%	N/A	$0.25	16	17
Utah	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	37	20	$9	100%	N/A	$0.02	0.00	0.00
Utah	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	11	20	$4	100%	N/A	$0.03	0.00	0.00
Utah	Small Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	216	18	$648	45%	65%	$0.17	12	12
Utah	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,300	14	$4,644	5.0%	94%	$0.27	12	12
Utah	Small Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	866	12	$75	10%	39%	$0.01	6	6

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Utah	Small Retail	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,705	25	$1,422	45%	69%	$0.06	102	102
Utah	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	216	25	$684	25%	85%	$0.24	8	8
Utah	Small Retail	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	260	20	$469	45%	62%	$0.10	13	13
Utah	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	156	20	$82	45%	85%	$0.03	10	10
Utah	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,084	25	$2,538	15%	82%	$0.09	46	46
Utah	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	387	25	$783	15%	90%	$0.16	9	9
Utah	Small Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$652	10%	85%	.	0.00	0.00
Utah	Small Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,239	10%	73%	.	0.00	0.00
Utah	Small Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,083	7	$532	90%	85%	$0.03	143	143
Utah	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,402	25	$2	15%	90%	$0.00	29	29
Utah	Small Retail	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,202	25	$110	15%	73%	$0.01	20	20
Utah	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	591	14	$4,644	5.0%	94%	$0.60	1	1
Utah	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	98	25	$684	75%	85%	$0.53	1	1
Utah	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	70	20	$82	45%	85%	$0.06	0.77	0.77
Utah	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	176	25	$783	35%	90%	$0.34	1	1
Utah	Small Retail	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	394	15	$2,700	10%	75%	$0.34	1	1
Utah	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	637	25	$2	80%	90%	$0.00	15	15
Utah	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	201	10	$27	100%	N/A	$0.01	257	257
Utah	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	201	10	$27	100%	N/A	$0.01	57	57
Utah	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	79	15	$17	95%	76%	$0.02	156	156
Utah	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,996	20	$300	55%	45%	$0.01	1,334	1,334
Utah	Small Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	47	7	$13	65%	25%	$0.02	0.00	0.00
Utah	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	63	15	$17	95%	76%	$0.02	24	24
Utah	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,576	20	$300	55%	45%	$0.01	158	158
Utah	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	418	15	$241	75%	N/A	$0.04	0.12	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	414	15	$144	75%	N/A	$0.03	0.00	0.00
Utah	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	418	15	$241	75%	N/A	$0.04	0.03	0.48
Utah	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	414	15	$144	75%	N/A	$0.03	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.03	0.24	0.30
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.07	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	35	10	$750	75%	94%	$1.64	0.79	0.79
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.21	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.23	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.22	0.02	0.02
Utah	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	140	25	$800	2.5%	100%	$0.44	0.10	0.10
Utah	Small Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	90%	$0.28	0.15	0.15
Utah	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	11	9	$7	95%	25%	$0.05	0.08	0.08
Utah	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	17	10	$105	75%	95%	$0.46	0.40	0.40
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.03	0.03	0.03
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.07	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	34	10	$750	75%	94%	$1.66	0.12	0.12

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.21	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.23	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.22	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	139	25	$640	2.5%	100%	$0.35	0.00	0.00
Utah	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	11	9	$0.05	95%	25%	$0.00	0.01	0.01
Utah	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	17	10	$105	75%	95%	$0.47	0.06	0.06
Utah	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	381	15	$1,241	75%	N/A	$0.25	116	121
Utah	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	22	15	$54	100%	N/A	$0.18	0.00	0.00
Utah	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	381	15	$1,241	75%	N/A	$0.25	31	31
Utah	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	22	15	$54	100%	N/A	$0.18	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.03	3	3
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	35	10	$750	25%	94%	$1.61	3	3
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.21	0.00	0.11
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.05	0.29	0.34
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.23	0.00	0.30
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.22	2	2
Utah	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	143	25	$800	2.5%	100%	$0.43	1	1
Utah	Small Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	90%	$0.27	2	2
Utah	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	11	9	$7	95%	25%	$0.05	1	1
Utah	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	17	10	$105	75%	95%	$0.45	5	5
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.03	0.55	0.55
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.06	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.06	0.00	0.00

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Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.07	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.05	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.04	0.00	0.00
Utah	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	34	10	$750	25%	94%	$1.65	0.60	0.60
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.21	0.00	0.02
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.05	0.05	0.05
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.23	0.00	0.06
Utah	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.22	0.37	0.37
Utah	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	139	25	$640	2.5%	100%	$0.35	0.08	0.08
Utah	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	11	9	$0.05	95%	25%	$0.00	0.19	0.19
Utah	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	17	10	$105	75%	95%	$0.47	0.92	0.92
Utah	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	220	4	$25	100%	N/A	$0.01	224	224
Utah	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	220	4	$25	100%	N/A	$0.01	23	23
Utah	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	86	5	$1,703	95%	81%	$1.51	13	13
Utah	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	524	10	$5,898	25%	70%	$0.86	17	17
Utah	Warehouse	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	346	15	$13,694	45%	90%	$3.03	26	26
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,454	20	$4,392	100%	N/A	$0.23	143	181
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	484	20	$1,464	100%	N/A	$0.23	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,081	20	$3,266	100%	N/A	$0.23	0.00	0.00
Utah	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	693	15	$3,500	80%	98%	$0.39	102	102
Utah	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	554	7	$729	10%	94%	$0.10	9	9
Utah	Warehouse	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	970	15	$65	65%	35%	$0.01	38	38
Utah	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	277	13	$527	75%	65%	$0.15	22	22
Utah	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	693	15	$1,750	75%	76%	$0.15	64	64
Utah	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	693	40	$1,300	2.0%	**%	$11.22	0.00	0.00
Utah	Warehouse	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	346	12	$70	10%	39%	$0.01	2	2
Utah	Warehouse	Cooling Chillers	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	25	25	$5,266	45%	63%	$1.01	1	1
Utah	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2	25	$2,533	25%	85%	$3.76	0.07	0.07
Utah	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	82%	.	0.00	0.00
Utah	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Utah	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Utah	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	67%	.	0.00	0.00
Utah	Warehouse	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (UT State Code)	No Insulation	Per Building	Existing	104	15	$205	65%	45%	$0.15	4	4
Utah	Warehouse	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	866	7	$1,971	90%	85%	$0.14	101	101
Utah	Warehouse	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	282	10	$621	35%	68%	$0.17	9	9
Utah	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,122	25	$2	15%	90%	$0.00	20	20
Utah	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	962	25	$102	15%	75%	$0.01	14	14
Utah	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	53	5	$1,703	95%	81%	$2.45	1	1
Utah	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	323	10	$5,308	25%	70%	$1.26	2	2
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,084	20	$3,953	100%	N/A	$0.28	34	34
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	361	20	$1,317	100%	N/A	$0.28	0.00	0.00
Utah	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	806	20	$2,939	100%	N/A	$0.28	0.00	0.00
Utah	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	428	15	$3,500	80%	98%	$0.63	12	12

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	342	7	$656	10%	94%	$0.15	1	1
Utah	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	171	13	$475	75%	65%	$0.21	2	2
Utah	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	428	15	$1,750	75%	76%	$0.23	8	8
Utah	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	428	40	$1,300	2.0%	**%	$18.18	0.00	0.00
Utah	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	1	25	$2,533	75%	85%	$4.76	0.02	0.02
Utah	Warehouse	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	428	15	$10,000	10%	75%	$1.31	1	1
Utah	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	692	25	$2	80%	90%	$0.00	13	13
Utah	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	233	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	597	15	$680	100%	N/A	$0.09	0.00	0.00
Utah	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,945	15	$-14254.079	25%	N/A	$0.04	143	193
Utah	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	173	15	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	442	15	$544	100%	N/A	$0.09	0.00	0.00
Utah	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,662	15	$-10391.851	25%	N/A	$0.05	29	31
Utah	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	862	15	$3,500	80%	98%	$0.31	912	912
Utah	Warehouse	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,293	10	$4,252	10%	40%	$0.25	64	64
Utah	Warehouse	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	862	5	$1,200	95%	72%	$0.11	732	732
Utah	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,156	15	$20,833	50%	94%	$0.74	1,168	1,168
Utah	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	862	15	$1,750	75%	76%	$0.13	497	497
Utah	Warehouse	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	215	18	$2,400	45%	65%	$0.70	60	60
Utah	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	862	40	$1,300	2.0%	**%	$9.02	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	431	12	$70	10%	39%	$0.01	15	15
Utah	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	32	25	$5,266	45%	63%	$0.99	8	8
Utah	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	2	25	$2,533	25%	85%	$3.71	0.60	0.60
Utah	Warehouse	Cooling Dx Evap	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	258	20	$1,739	45%	62%	$0.42	69	69

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	155	20	$305	45%	85%	$0.12	55	55
Utah	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	82%	.	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	67%	.	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,078	7	$1,971	90%	85%	$0.11	772	772
Utah	Warehouse	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	282	10	$621	35%	68%	$0.17	56	56
Utah	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	1,395	25	$2	15%	90%	$0.00	157	157
Utah	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,196	25	$102	15%	75%	$0.01	110	110
Utah	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	589	15	$3,500	80%	98%	$0.46	125	125
Utah	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,473	15	$20,833	50%	94%	$1.09	173	173
Utah	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	589	15	$1,750	75%	76%	$0.18	76	76
Utah	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	589	40	$1,300	2.0%	**%	$13.21	0.00	0.00
Utah	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	2	25	$2,533	75%	85%	$4.69	0.20	0.20
Utah	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	106	20	$305	45%	85%	$0.17	6	6
Utah	Warehouse	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	589	15	$10,000	10%	75%	$1.03	9	9
Utah	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	953	25	$2	80%	90%	$0.00	126	126
Utah	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	33	6	$0.73	100%	N/A	$0.00	183	183
Utah	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	33	6	$0.73	100%	N/A	$0.00	37	37
Utah	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	29	4	$33	100%	N/A	$0.09	9	9
Utah	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	29	4	$33	100%	N/A	$0.09	12	12
Utah	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.39
Utah	Warehouse	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	30	20	$4	8.8%	100%	$0.01	13	13
Utah	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.30
Utah	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	733	15	$2,533	100%	N/A	$0.27	0.00	0.00

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Utah	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,231	15	$5,067	100%	N/A	$0.17	304	367
Utah	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	901	15	$3,500	80%	98%	$0.30	163	163
Utah	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,213	15	$1,750	75%	76%	$0.06	281	281
Utah	Warehouse	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	553	18	$2,400	45%	65%	$0.33	34	34
Utah	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,968	14	$9,070	5.0%	94%	$0.35	19	19
Utah	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	901	40	$1,300	2.0%	**%	$8.63	0.00	0.00
Utah	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,949	30	$50,218	5.0%	N/A	$2.33	22	30
Utah	Warehouse	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,660	12	$70	10%	39%	$0.00	13	13
Utah	Warehouse	Heat Pump	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,495	25	$5,266	45%	63%	$0.16	146	146
Utah	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	328	25	$2,533	25%	85%	$0.59	14	14
Utah	Warehouse	Heat Pump	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	664	20	$1,739	45%	62%	$0.20	37	37
Utah	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	398	20	$305	45%	85%	$0.06	30	30
Utah	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,814	25	$9,400	15%	82%	$0.15	117	117
Utah	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	678	25	$2,900	15%	90%	$0.33	17	17
Utah	Warehouse	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Utah	Warehouse	Heat Pump	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	67%	.	0.00	0.00
Utah	Warehouse	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,767	7	$1,971	90%	85%	$0.05	406	406
Utah	Warehouse	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	282	10	$621	35%	68%	$0.17	11	11
Utah	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	3,582	25	$2	15%	90%	$0.00	83	83
Utah	Warehouse	Heat Pump	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,072	25	$102	15%	75%	$0.00	58	58
Utah	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	604	15	$2,027	100%	N/A	$0.26	0.00	0.00
Utah	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,940	15	$4,054	100%	N/A	$0.16	73	75
Utah	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	701	15	$3,500	80%	98%	$0.38	25	25
Utah	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,721	15	$1,750	75%	76%	$0.08	44	45
Utah	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,530	14	$9,070	5.0%	94%	$0.46	3	3
Utah	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	701	40	$1,300	2.0%	**%	$11.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	4,023	30	$77,164	5.0%	N/A	$1.47	6	6
Utah	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	255	25	$2,533	75%	85%	$0.76	5	5
Utah	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	309	20	$305	45%	85%	$0.08	3	3
Utah	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	527	25	$2,900	35%	90%	$0.42	5	5
Utah	Warehouse	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,721	15	$10,000	10%	75%	$0.45	5	5
Utah	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,785	25	$2	80%	90%	$0.00	73	73
Utah	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	936	8	$260	5.0%	95%	$0.02	280	280
Utah	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	606	8	$680	75%	70%	$0.09	1,980	1,980
Utah	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	504	15	$681	62%	90%	$0.10	1,770	1,770
Utah	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$1,829	90%	53%	$0.46	701	701
Utah	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$58	75%	95%	$0.11	174	174
Utah	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	9,110	17	$6,190	5.0%	95%	$0.05	2,723	2,723
Utah	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	936	8	$260	5.0%	95%	$0.02	56	56
Utah	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	606	8	$680	75%	70%	$0.09	397	397
Utah	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	504	15	$681	62%	90%	$0.10	355	355
Utah	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$1,829	90%	53%	$0.46	140	140
Utah	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$58	75%	95%	$0.11	33	33
Utah	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	9,110	17	$6,190	5.0%	95%	$0.05	497	497
Utah	Warehouse	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	298	10	$832	0.5%	95%	$0.21	7	7
Utah	Warehouse	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,673	8	$8,000	10%	98%	$0.37	842	842
Utah	Warehouse	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,255	8	$6,000	10%	98%	$0.37	624	624
Utah	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,302	13	$1,121	100%	N/A	$0.07	4,561	4,724
Utah	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	946	13	$219	100%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

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Utah	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,002	13	$14,883	25%	N/A	$0.57	2,244	2,324
Utah	Warehouse	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,621	8	$1,829	75%	53%	$0.09	3,245	3,245
Utah	Warehouse	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,096	15	$1,380	100%	N/A	$0.05	0.00	0.00
Utah	Warehouse	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,605	15	$5,027	95%	N/A	$0.15	6,239	6,394
Utah	Warehouse	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,326	22	$34,967	50%	N/A	$1.15	184	191
Utah	Warehouse	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,463	15	$251	25%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	702	15	$22,248	100%	N/A	$2.43	0.00	0.00
Utah	Warehouse	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,238	8	$1,829	75%	53%	$0.11	2,834	2,834
Utah	Warehouse	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	49	11	$19	95%	50%	$0.03	146	146
Utah	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.07	57	57
Utah	Warehouse	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	549	10	$832	0.5%	95%	$0.12	2	2
Utah	Warehouse	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,392	8	$8,000	10%	98%	$0.44	154	154
Utah	Warehouse	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,044	8	$6,000	10%	98%	$0.44	0.00	0.00
Utah	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.07	10	10
Utah	Warehouse	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,748	13	$10,197	100%	N/A	$0.29	3,303	3,317
Utah	Warehouse	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,981	8	$1,829	75%	53%	$0.05	1,336	1,336
Utah	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	10,082	4	$132	85%	N/A	$0.00	0.00	1,897
Utah	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,819	1	$87	100%	N/A	$0.00	0.00	0.00
Utah	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,327	1	$68	100%	N/A	$0.00	0.00	0.00

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Utah	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	10,166	12	$1,637	15%	N/A	$0.01	525	3,187
Utah	Warehouse	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	649	8	$1,829	75%	53%	$0.22	670	670
Utah	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.82	10%	90%	$0.02	1	1
Utah	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	52	4	$0.00	10%	45%	$0.00	14	14
Utah	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	153	10	$0.75	95%	75%	$0.00	687	687
Utah	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$1	5.0%	86%	$0.01	2	2
Utah	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	66	4	$13	60%	90%	$0.02	226	226
Utah	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.82	10%	90%	$0.02	0.34	0.34
Utah	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	52	4	$0.00	10%	45%	$0.00	2	2
Utah	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	153	10	$0.75	95%	75%	$0.00	137	137
Utah	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$1	5.0%	86%	$0.01	0.56	0.56
Utah	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	66	4	$13	60%	90%	$0.02	45	45
Utah	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	105	6	$115	100%	N/A	$0.08	19	19
Utah	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	105	6	$115	100%	N/A	$0.08	5	5
Utah	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	38	6	$4	100%	N/A	$0.01	21	21
Utah	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	38	6	$4	100%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$146	100%	N/A	$0.21	0.00	0.00
Utah	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$196	100%	N/A	$0.25	94	115
Utah	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$11	100%	N/A	$0.02	0.00	0.00
Utah	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	15	20	$5	100%	N/A	$0.03	0.00	0.00
Utah	Warehouse	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	376	20	$37	8.8%	100%	$0.01	154	154
Utah	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$146	100%	N/A	$0.21	0.00	0.00
Utah	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$196	100%	N/A	$0.25	48	50
Utah	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$11	100%	N/A	$0.02	0.00	0.00
Utah	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	15	20	$5	100%	N/A	$0.03	0.00	0.00
Utah	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,180	15	$1,750	75%	76%	$0.04	738	738
Utah	Warehouse	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	545	18	$2,400	45%	65%	$0.24	90	90

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Utah	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,270	14	$9,070	5.0%	94%	$0.21	85	85
Utah	Warehouse	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,180	12	$70	10%	39%	$0.00	46	46
Utah	Warehouse	Space Heat	Insulation - Ceiling	R-20ci (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,139	25	$5,266	45%	63%	$0.10	647	647
Utah	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	Existing	543	25	$2,533	25%	85%	$0.36	60	60
Utah	Warehouse	Space Heat	Insulation - Duct	R-5 (UT State Code)	No Insulation	Per Building	Existing	654	20	$1,739	45%	62%	$0.15	95	95
Utah	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	Existing	392	20	$305	45%	85%	$0.04	77	77
Utah	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30 (UT State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,617	25	$9,400	15%	82%	$0.09	480	480
Utah	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	Existing	975	25	$2,900	15%	90%	$0.23	64	64
Utah	Warehouse	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (UT State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Utah	Warehouse	Space Heat	Insulation - Wall	R-13 + 7.5ci (UT State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	67%	.	0.00	0.00
Utah	Warehouse	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,725	7	$1,971	90%	85%	$0.04	1,018	1,018
Utah	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	Existing	3,527	25	$2	15%	90%	$0.00	209	209
Utah	Warehouse	Space Heat	Windows-High Efficiency	U-0.35 (UT State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,025	25	$102	15%	75%	$0.00	146	146
Utah	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,740	15	$1,750	75%	76%	$0.06	118	118
Utah	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,610	14	$9,070	5.0%	94%	$0.27	13	13
Utah	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (UT State Code)	Per Building	New	433	25	$2,533	75%	85%	$0.45	22	22
Utah	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (UT State Code)	Per Building	New	313	20	$305	45%	85%	$0.06	9	9
Utah	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (UT State Code)	Per Building	New	778	25	$2,900	35%	90%	$0.29	19	19
Utah	Warehouse	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,740	15	$10,000	10%	75%	$0.33	13	13
Utah	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.35 (UT State Code)	Per Building	New	2,815	25	$2	80%	90%	$0.00	189	189
Utah	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	255	10	$35	100%	N/A	$0.01	752	752
Utah	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	255	10	$35	100%	N/A	$0.01	167	167
Utah	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	85	15	$66	95%	76%	$0.06	122	122
Utah	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,142	20	$1,113	55%	45%	$0.04	3,329	3,329
Utah	Warehouse	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	176	7	$50	65%	25%	$0.02	168	168
Utah	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	67	15	$66	95%	76%	$0.08	61	61

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Utah	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,683	20	$1,113	55%	45%	$0.05	390	390
Utah	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,252	15	$241	75%	N/A	$0.01	1	25
Utah	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,238	15	$144	75%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,252	15	$241	75%	N/A	$0.01	0.39	5
Utah	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,238	15	$144	75%	N/A	$0.01	0.00	0.00
Utah	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	105	10	$2,778	55%	94%	$2.03	7	7
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.21	0.00	0.00
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.05	0.01	0.01
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.23	0.00	0.01
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.22	0.07	0.09
Utah	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	420	25	$800	2.5%	100%	$0.15	1	1
Utah	Warehouse	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	21	12	$25	80%	90%	$0.09	2	2
Utah	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	33	9	$5	95%	25%	$0.01	1	1
Utah	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	21	21
Utah	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	14	14
Utah	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	52	10	$78	75%	95%	$0.11	5	5
Utah	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	104	10	$2,778	55%	94%	$2.05	1	1
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.21	0.00	0.00
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.23	0.00	0.00
Utah	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.22	0.01	0.01
Utah	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	416	25	$640	2.5%	100%	$0.12	0.07	0.07
Utah	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	33	9	$0.04	95%	25%	$0.00	0.16	0.16
Utah	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	3	3
Utah	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	52	10	$78	75%	95%	$0.12	0.79	0.79
Utah	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,140	15	$1,241	75%	N/A	$0.08	1,337	1,477
Utah	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	68	15	$54	100%	N/A	$0.06	0.00	0.00
Utah	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,140	15	$1,241	75%	N/A	$0.08	367	375
Utah	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	68	15	$54	100%	N/A	$0.06	0.00	0.00
Utah	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	107	10	$2,778	25%	94%	$1.99	45	45
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.21	0.00	0.05
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.05	0.13	0.16
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.23	0.00	0.14
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.22	1	1
Utah	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	429	25	$800	2.5%	100%	$0.14	19	19
Utah	Warehouse	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (UT State Code)	No Insulation	Per Building	Existing	21	12	$25	80%	90%	$0.09	27	27
Utah	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	34	9	$5	95%	25%	$0.01	14	14
Utah	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.01	278	278
Utah	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.02	190	190
Utah	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	53	10	$78	75%	95%	$0.11	68	68

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Utah	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	104	10	$2,778	25%	94%	$2.04	7	7
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.21	0.00	0.01
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.05	0.02	0.02
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.23	0.00	0.02
Utah	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.22	0.17	0.17
Utah	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	417	25	$640	2.5%	100%	$0.12	1	1
Utah	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	33	9	$0.04	95%	25%	$0.00	2	2
Utah	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.01	48	48
Utah	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	52	10	$78	75%	95%	$0.12	11	11
Washington	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	57	4	$6	100%	N/A	$0.03	6	6
Washington	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	57	4	$6	100%	N/A	$0.03	0.12	0.12
Washington	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	456	12	$76	90%	90%	$0.02	34	34
Washington	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	41	12	$107	35%	90%	$0.35	1	1
Washington	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	196	12	$47	95%	85%	$0.03	14	14
Washington	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	341	12	$193	19%	55%	$0.07	0.00	0.00
Washington	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	557	12	$356	55%	21%	$0.08	6	6
Washington	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	962	12	$542	14%	75%	$0.07	9	9
Washington	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	456	12	$76	90%	90%	$0.02	1	1
Washington	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	41	12	$107	35%	90%	$0.35	0.04	0.04
Washington	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	196	12	$47	95%	85%	$0.03	0.51	0.51
Washington	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	341	12	$193	19%	55%	$0.07	0.00	0.00
Washington	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	557	12	$356	55%	21%	$0.08	0.21	0.21
Washington	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	962	12	$542	14%	75%	$0.07	0.32	0.32

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Washington	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	302	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	772	15	$272	100%	N/A	$0.04	40	55
Washington	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	6,399	15	$-5701.6316	10%	N/A	$-0.14	23	31
Washington	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	193	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	493	15	$217	100%	N/A	$0.05	1	1
Washington	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	4,085	15	$-4156.7405	10%	N/A	$-0.16	0.74	0.77
Washington	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,203	15	$1,050	80%	98%	$0.10	340	340
Washington	Grocery	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,805	10	$1,701	10%	90%	$0.14	54	54
Washington	Grocery	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,203	5	$480	95%	72%	$0.09	271	271
Washington	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	3,009	15	$6,250	50%	94%	$0.24	432	432
Washington	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,203	15	$525	75%	76%	$0.04	184	184
Washington	Grocery	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	300	18	$720	45%	65%	$0.22	22	22
Washington	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	541	12	$5,450	10%	75%	$1.16	10	10
Washington	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,203	40	$30,390	2.0%	**%	$2.23	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	601	12	$59	10%	39%	$0.01	5	5
Washington	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	54	25	$2,340	45%	69%	$0.52	4	4
Washington	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$810	25%	85%	.	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	505	20	$580	45%	60%	$0.10	34	34
Washington	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,820	15%	84%	.	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$870	15%	90%	.	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	61%	.	0.00	0.00
Washington	Grocery	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,504	7	$591	90%	85%	$0.06	286	286
Washington	Grocery	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	400	10	$526	35%	66%	$0.19	20	20

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Washington	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,518	25	$5	15%	90%	$0.00	45	45
Washington	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,385	25	$83	15%	74%	$0.01	33	33
Washington	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	705	15	$1,050	80%	98%	$0.17	6	6
Washington	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,763	15	$6,250	50%	94%	$0.41	9	9
Washington	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	705	15	$525	75%	76%	$0.08	4	4
Washington	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	317	12	$5,450	10%	75%	$1.98	0.23	0.23
Washington	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	705	40	$30,390	2.0%	**%	$3.81	0.00	0.00
Washington	Grocery	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	777	30	$777	5.0%	100%	$0.08	0.28	0.28
Washington	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	889	25	$5	80%	90%	$0.00	5	5
Washington	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	37	6	$0.81	100%	N/A	$0.00	23	23
Washington	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	37	6	$0.81	100%	N/A	$0.00	0.81	0.81
Washington	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	7	4	$8	100%	N/A	$0.32	0.27	0.27
Washington	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	7	4	$8	100%	N/A	$0.32	0.06	0.06
Washington	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.12	100%	N/A	$0.00	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	5	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.85	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	7	20	$1	100%	N/A	$0.02	0.72	0.83
Washington	Grocery	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	20	20	$4	8.8%	100%	$0.02	1	1
Washington	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.12	100%	N/A	$0.00	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	5	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.85	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	7	20	$1	100%	N/A	$0.02	0.05	0.06
Washington	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	749	15	$1,013	100%	N/A	$0.16	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,007	15	$2,027	100%	N/A	$0.12	51	61
Washington	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,305	15	$1,050	80%	98%	$0.09	44	44
Washington	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,131	15	$525	75%	76%	$0.03	49	49
Washington	Grocery	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	532	18	$720	45%	65%	$0.14	6	6
Washington	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,239	14	$5,160	5.0%	94%	$0.50	2	2
Washington	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	959	12	$5,450	10%	75%	$0.75	2	2
Washington	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,305	40	$30,390	2.0%	**%	$2.06	0.00	0.00
Washington	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,209	30	$60,087	5.0%	N/A	$1.06	4	5
Washington	Grocery	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,598	12	$59	10%	39%	$0.00	2	2
Washington	Grocery	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,954	25	$2,340	45%	69%	$0.12	23	23
Washington	Grocery	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	208	25	$810	25%	85%	$0.39	1	1
Washington	Grocery	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	895	20	$580	45%	60%	$0.07	8	8
Washington	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,891	25	$2,820	15%	84%	$0.15	8	8
Washington	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	371	25	$870	15%	90%	$0.23	1	1
Washington	Grocery	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Grocery	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	61%	.	0.00	0.00
Washington	Grocery	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,664	7	$591	90%	85%	$0.04	73	73
Washington	Grocery	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	400	10	$526	35%	66%	$0.19	3	3
Washington	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,689	25	$5	15%	90%	$0.00	11	11
Washington	Grocery	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,453	25	$83	15%	74%	$0.00	8	8
Washington	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	426	15	$810	100%	N/A	$0.22	0.00	0.00
Washington	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,066	15	$1,621	100%	N/A	$0.18	1	1
Washington	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	664	15	$1,050	80%	98%	$0.18	0.77	0.78
Washington	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,084	15	$525	75%	76%	$0.06	0.90	0.90

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	630	14	$5,160	5.0%	94%	$0.99	0.04	0.04
Washington	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	488	12	$5,450	10%	75%	$1.47	0.05	0.05
Washington	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	664	40	$30,390	2.0%	**%	$4.05	0.00	0.00
Washington	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,007	30	$30,865	5.0%	N/A	$0.93	0.15	0.15
Washington	Grocery	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	105	25	$810	75%	85%	$0.76	0.06	0.06
Washington	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	188	25	$870	35%	90%	$0.46	0.05	0.05
Washington	Grocery	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,195	30	$1,195	5.0%	100%	$0.09	0.05	0.05
Washington	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,368	25	$5	80%	90%	$0.00	1	1
Washington	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	9	9
Washington	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	682	8	$372	75%	70%	$0.09	258	258
Washington	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	567	15	$766	62%	90%	$0.16	227	227
Washington	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	286	8	$548	45%	57%	$0.32	41	41
Washington	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	46	13	$70	75%	95%	$0.19	24	24
Washington	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	93	93
Washington	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.33	0.33
Washington	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	682	8	$372	75%	70%	$0.09	8	8
Washington	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	567	15	$766	62%	90%	$0.16	7	7
Washington	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	286	8	$548	45%	57%	$0.32	1	1
Washington	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	46	13	$70	75%	95%	$0.19	0.81	0.81
Washington	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	2	2
Washington	Grocery	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	437	10	$249	5.0%	95%	$0.08	12	12
Washington	Grocery	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,995	8	$3,000	5.0%	96%	$0.13	119	119
Washington	Grocery	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,996	8	$2,250	5.0%	96%	$0.13	89	89
Washington	Grocery	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	2,502	6	$928	85%	80%	$0.05	1,063	1,063

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	1,535	6	$779	85%	80%	$0.09	652	652
Washington	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,348	13	$-51.191483	100%	N/A	$-0.02	0.00	0.00
Washington	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,763	13	$804	100%	N/A	$0.06	585	642
Washington	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,947	13	$13,610	25%	N/A	$0.60	251	275
Washington	Grocery	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,991	8	$548	5.0%	57%	$0.05	30	30
Washington	Grocery	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	1,641	8	$50	10%	81%	$0.01	71	71
Washington	Grocery	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	600	15	$193	100%	N/A	$0.12	0.00	0.00
Washington	Grocery	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	739	15	$809	95%	N/A	$-0.00	191	192
Washington	Grocery	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	658	13	$5,886	50%	N/A	$0.79	7	7
Washington	Grocery	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	419	9	$1	25%	N/A	$-0.19	0.00	0.00
Washington	Grocery	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	209	15	$3,729	100%	N/A	$1.01	0.00	0.00
Washington	Grocery	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	277	8	$548	5.0%	57%	$0.33	5	5
Washington	Grocery	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	228	8	$50	10%	81%	$0.04	12	12
Washington	Grocery	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	260	11	$101	95%	50%	$0.05	89	89
Washington	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	52	13	$44	95%	98%	$0.11	34	34
Washington	Grocery	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	447	10	$249	5.0%	95%	$0.08	0.49	0.49
Washington	Grocery	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,198	8	$3,000	5.0%	96%	$0.16	3	3
Washington	Grocery	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,398	8	$2,250	5.0%	96%	$0.16	2	2
Washington	Grocery	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	1,936	6	$473	85%	80%	$0.01	30	30
Washington	Grocery	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	873	6	$340	85%	80%	$0.06	13	13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	52	13	$44	95%	98%	$0.11	1	1
Washington	Grocery	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,566	13	$6,131	100%	N/A	$0.49	34	35
Washington	Grocery	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	2,465	30	$2,465	5.0%	100%	$0.09	1	1
Washington	Grocery	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,035	8	$548	5.0%	57%	$0.05	1	1
Washington	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,465	4	$60	98%	N/A	$-0.01	0.00	0.00
Washington	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,527	1	$39	100%	N/A	$0.01	0.00	0.00
Washington	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,635	1	$31	100%	N/A	$-0.01	0.00	0.00
Washington	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,528	12	$746	15%	N/A	$0.00	10	11
Washington	Grocery	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	169	8	$548	5.0%	57%	$0.55	3	3
Washington	Grocery	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	139	8	$50	10%	81%	$0.06	8	8
Washington	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.66	10%	90%	$0.05	0.16	0.16
Washington	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	58	4	$0.00	10%	45%	$0.00	1	1
Washington	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	15	15
Washington	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	436	436
Washington	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.45	5.0%	86%	$0.02	0.26	0.26
Washington	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	23	23
Washington	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.66	10%	90%	$0.05	0.00	0.00
Washington	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	58	4	$0.00	10%	45%	$0.00	0.06	0.06
Washington	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	0.54	0.54
Washington	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	15	15
Washington	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.45	5.0%	86%	$0.02	0.00	0.00
Washington	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	0.80	0.80
Washington	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	117	6	$128	100%	N/A	$0.23	2	2

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Washington	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	117	6	$128	100%	N/A	$0.23	0.12	0.12
Washington	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	27	6	$3	100%	N/A	$0.02	1	1
Washington	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	27	6	$3	100%	N/A	$0.02	0.00	0.00
Washington	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	2,934	8	$252	90%	45%	$0.01	618	618
Washington	Grocery	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	4,921	15	$742	95%	90%	$0.02	2,191	2,191
Washington	Grocery	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	1,608	15	$494	95%	90%	$0.04	716	716
Washington	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	3,292	10	$2,731	95%	80%	$0.12	1,303	1,303
Washington	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	4,470	10	$3,702	95%	80%	$0.12	1,769	1,769
Washington	Grocery	Refrigeration	Compressor VSD Retrofit	VSD Compressor	Constant Speed Compressor	Per Building	Existing	7,463	13	$1,334	60%	77%	$0.02	1,445	1,445
Washington	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	866	10	$3,300	95%	68%	$0.55	222	222
Washington	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	484	8	$47	50%	95%	$0.02	119	119
Washington	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	Existing	2,077	15	$706	50%	81%	$0.04	331	331
Washington	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	477	12	$452	95%	77%	$0.13	180	180
Washington	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	1,210	5	$192	95%	85%	$0.04	378	378
Washington	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	4,080	3	$640	95%	85%	$0.06	1,261	1,261
Washington	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	375	12	$-88.211516	95%	81%	$-0.03	150	150
Washington	Grocery	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	1,844	13	$263	80%	90%	$0.02	478	478
Washington	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	683	4	$493	95%	20%	$0.20	45	45
Washington	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	7,890	15	$1,956	75%	95%	$0.03	1,982	1,982
Washington	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	93	10	$17	100%	85%	$0.03	41	41
Washington	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	387	15	$349	75%	95%	$0.10	89	89
Washington	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	2,934	8	$252	90%	45%	$0.01	21	21
Washington	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	3,292	10	$2,731	95%	80%	$0.12	45	45
Washington	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	4,470	10	$3,702	95%	80%	$0.12	61	61
Washington	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	866	10	$3,300	95%	68%	$0.55	8	8
Washington	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	484	8	$47	50%	95%	$0.02	4	4

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	New	2,077	15	$706	50%	81%	$0.04	12	12
Washington	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	477	12	$452	95%	77%	$0.13	6	6
Washington	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	1,210	5	$192	95%	85%	$0.04	15	15
Washington	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	2,040	3	$248	80%	90%	$0.04	22	22
Washington	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	375	12	$-88.211516	95%	81%	$-0.03	5	5
Washington	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	683	4	$493	95%	20%	$0.20	1	1
Washington	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	7,890	15	$1,956	75%	95%	$0.03	81	81
Washington	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	93	10	$17	100%	85%	$0.03	1	1
Washington	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	387	15	$349	75%	95%	$0.10	3	3
Washington	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	16	20	$5	100%	N/A	$0.04	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	30	20	$12	100%	N/A	$0.04	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	42	20	$164	100%	N/A	$0.39	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	52	20	$220	100%	N/A	$0.42	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	59	20	$32	100%	N/A	$0.06	7	8
Washington	Grocery	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	252	20	$45	8.8%	100%	$0.02	13	13
Washington	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	16	20	$5	100%	N/A	$0.04	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	30	20	$12	100%	N/A	$0.04	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	42	20	$164	100%	N/A	$0.39	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	52	20	$220	100%	N/A	$0.42	0.00	0.00
Washington	Grocery	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	59	20	$32	100%	N/A	$0.06	0.65	0.65
Washington	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,359	15	$525	75%	76%	$0.02	122	122
Washington	Grocery	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	339	18	$720	45%	65%	$0.12	14	14
Washington	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,038	14	$5,160	5.0%	94%	$0.31	14	14
Washington	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	611	12	$5,450	10%	75%	$0.62	6	6
Washington	Grocery	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,359	12	$59	10%	39%	$0.00	7	7
Washington	Grocery	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,153	25	$2,340	45%	69%	$0.07	142	142

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	313	25	$810	25%	85%	$0.26	9	9
Washington	Grocery	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	570	20	$580	45%	60%	$0.05	20	20
Washington	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,267	25	$2,820	15%	84%	$0.09	54	54
Washington	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	608	25	$870	15%	90%	$0.14	10	10
Washington	Grocery	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Grocery	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	61%	.	0.00	0.00
Washington	Grocery	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,698	7	$591	90%	85%	$0.03	167	167
Washington	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,714	25	$5	15%	90%	$0.00	26	26
Washington	Grocery	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,563	25	$83	15%	74%	$0.00	19	19
Washington	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	816	15	$525	75%	76%	$0.04	2	2
Washington	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,224	14	$5,160	5.0%	94%	$0.51	0.29	0.29
Washington	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	367	12	$5,450	10%	75%	$1.05	0.14	0.14
Washington	Grocery	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	188	25	$810	75%	85%	$0.43	0.44	0.44
Washington	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	365	25	$870	35%	90%	$0.24	0.42	0.42
Washington	Grocery	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	899	30	$899	5.0%	100%	$0.05	0.16	0.16
Washington	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,029	25	$5	80%	90%	$0.00	3	3
Washington	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	220	10	$30	100%	N/A	$0.02	74	74
Washington	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	220	10	$30	100%	N/A	$0.02	2	2
Washington	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,394	10	$367	5.0%	90%	$0.02	77	77
Washington	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,400	95%	65%	$0.23	497	497
Washington	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	122	15	$19	95%	76%	$0.02	59	59
Washington	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	3,052	20	$334	55%	45%	$0.01	504	504
Washington	Grocery	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
Washington	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	2,334	10	$367	5.0%	90%	$0.02	2	2

Table C-2.2. Commercial Measure Details

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Washington	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,400	95%	65%	$0.23	16	16
Washington	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	119	15	$19	95%	76%	$0.02	1	1
Washington	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,975	20	$334	55%	45%	$0.01	12	12
Washington	Grocery	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,286	30	$1,286	5.0%	100%	$0.09	1	1
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	513	15	$192	75%	N/A	$0.07	0.00	0.00
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	516	15	$322	75%	N/A	$0.10	0.00	0.00
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	528	15	$556	75%	N/A	$0.15	0.01	0.05
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	534	15	$462	75%	N/A	$0.13	0.08	0.23
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	513	15	$192	75%	N/A	$0.07	0.00	0.00
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	516	15	$322	75%	N/A	$0.10	0.00	0.00
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	528	15	$556	75%	N/A	$0.15	0.00	0.00
Washington	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	534	15	$462	75%	N/A	$0.13	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	20	10	$833	75%	94%	$6.01	0.46	0.46
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	45%	35%	$0.41	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	45%	35%	$0.42	0.01	0.01
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	45%	55%	$0.40	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	45%	55%	$0.40	0.06	0.07
Washington	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	76	12	$43	40%	95%	$0.07	0.94	0.95

Table C-2.2. Commercial Measure Details

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Washington	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	70	12	$43	40%	94%	$0.07	0.85	0.86
Washington	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	80	25	$800	2.5%	100%	$0.98	0.05	0.05
Washington	Grocery	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	4	12	$25	80%	90%	$0.84	0.07	0.07
Washington	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	6	9	$8	95%	25%	$0.16	0.04	0.04
Washington	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.05	7	7
Washington	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	10	10	$117	75%	95%	$1.67	0.23	0.23
Washington	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	45	10	$2,730	55%	94%	$8.63	0.17	0.17
Washington	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	20	10	$833	75%	94%	$6.01	0.01	0.01
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	8	12	$25	45%	35%	$0.41	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	45%	35%	$0.42	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	45%	55%	$0.40	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	9	12	$27	45%	55%	$0.40	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	73	12	$41	40%	95%	$0.07	0.03	0.03
Washington	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	67	12	$41	40%	94%	$0.07	0.02	0.02
Washington	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	80	25	$640	2.5%	100%	$0.79	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	6	9	$0.06	95%	25%	$-0.04	0.00	0.00
Washington	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.05	0.25	0.25
Washington	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	10	10	$117	75%	95%	$1.67	0.00	0.00

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Washington	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	45	10	$2,730	55%	94%	$8.63	0.00	0.00
Washington	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	312	15	$1,136	75%	N/A	$0.50	14	18
Washington	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	487	15	$1,728	75%	N/A	$0.46	67	88
Washington	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12	15	$72	100%	N/A	$0.70	0.00	0.00
Washington	Grocery	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12	15	$72	100%	N/A	$0.70	0.00	0.00
Washington	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	312	15	$1,136	75%	N/A	$0.50	0.57	0.60
Washington	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	487	15	$1,728	75%	N/A	$0.46	2	2
Washington	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	12	15	$72	100%	N/A	$0.70	0.00	0.00
Washington	Grocery	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	12	15	$72	100%	N/A	$0.70	0.00	0.00
Washington	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	43	10	$833	50%	94%	$2.81	4	4
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	75%	35%	$0.41	0.00	0.04
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	35%	$0.42	0.16	0.20
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	75%	55%	$0.40	0.00	0.11
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	75%	55%	$0.40	0.85	1
Washington	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	76	12	$43	50%	95%	$0.07	8	10
Washington	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	70	12	$43	50%	95%	$0.07	7	9
Washington	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	172	25	$800	2.5%	100%	$0.46	0.92	0.92

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Grocery	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	90%	$0.39	1	1
Washington	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	13	9	$8	95%	25%	$0.05	0.78	0.78
Washington	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.05	54	54
Washington	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	21	10	$117	75%	95%	$0.75	3	3
Washington	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	98	10	$2,730	55%	94%	$4.03	7	7
Washington	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	43	10	$833	50%	94%	$2.81	0.13	0.13
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	8	12	$25	75%	35%	$0.41	0.00	0.00
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	35%	$0.42	0.00	0.00
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	75%	55%	$0.40	0.00	0.00
Washington	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	9	12	$27	75%	55%	$0.40	0.02	0.02
Washington	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	73	12	$41	50%	95%	$0.07	0.23	0.23
Washington	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	67	12	$41	50%	95%	$0.07	0.21	0.21
Washington	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	172	25	$640	2.5%	100%	$0.37	0.00	0.00
Washington	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.06	95%	25%	$-0.04	0.02	0.02
Washington	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.05	1	1
Washington	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	21	10	$117	75%	95%	$0.75	0.10	0.10
Washington	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	98	10	$2,730	55%	94%	$4.03	0.20	0.20
Washington	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	425	4	$48	100%	N/A	$0.03	63	74
Washington	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	655	4	$48	95%	30%	$0.02	173	173

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	425	4	$48	100%	N/A	$0.03	1	1
Washington	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	655	4	$48	95%	30%	$0.02	6	6
Washington	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	34	12	$5	90%	90%	$0.02	0.99	0.99
Washington	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	3	12	$8	25%	90%	$0.35	0.02	0.02
Washington	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	39	12	$9	95%	85%	$0.03	1	1
Washington	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	69	12	$39	7.0%	55%	$0.07	0.10	0.10
Washington	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	112	12	$72	15%	21%	$0.08	0.13	0.13
Washington	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	195	12	$109	11%	75%	$0.07	0.58	0.58
Washington	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	34	12	$5	90%	90%	$0.02	0.03	0.03
Washington	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	3	12	$8	25%	90%	$0.35	0.00	0.00
Washington	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	39	12	$9	95%	85%	$0.03	0.04	0.04
Washington	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	69	12	$39	7.0%	55%	$0.07	0.00	0.00
Washington	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	112	12	$72	15%	21%	$0.08	0.00	0.00
Washington	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	195	12	$109	11%	75%	$0.07	0.02	0.02
Washington	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	476	15	$762	5.0%	94%	$0.19	1	1
Washington	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	59	5	$519	95%	81%	$2.06	2	2
Washington	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	360	10	$2,398	25%	70%	$0.97	3	3
Washington	Health	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	238	15	$5,569	45%	90%	$2.72	4	4
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,076	20	$988	100%	N/A	$0.09	27	34
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	179	20	$164	100%	N/A	$0.09	0.00	0.00
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	658	20	$604	100%	N/A	$0.09	0.00	0.00
Washington	Health	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,430	15	$9,272	15%	67%	$0.50	6	6
Washington	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	476	15	$1,067	15%	98%	$0.26	3	3

Table C-2.2. Commercial Measure Details

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Washington	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	381	7	$296	10%	94%	$0.14	1	1
Washington	Health	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	667	15	$26	65%	35%	$0.00	6	6
Washington	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	190	13	$214	75%	65%	$0.14	4	4
Washington	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	476	15	$533	75%	76%	$0.09	11	11
Washington	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	214	12	$5,450	2.5%	75%	$2.24	0.16	0.16
Washington	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	476	40	$30,896	2.0%	**%	$5.73	0.00	0.00
Washington	Health	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	238	12	$79	10%	39%	$0.02	0.36	0.36
Washington	Health	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	10	25	$2,379	45%	65%	$0.59	0.12	0.12
Washington	Health	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$823	25%	85%	.	0.00	0.00
Washington	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,867	15%	84%	.	0.00	0.00
Washington	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$884	15%	90%	.	0.00	0.00
Washington	Health	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$736	10%	85%	.	0.00	0.00
Washington	Health	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$7,048	10%	71%	.	0.00	0.00
Washington	Health	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WA State Code)	No Insulation	Per Building	Existing	71	15	$62	65%	45%	$0.10	0.83	0.83
Washington	Health	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	595	7	$601	90%	85%	$0.13	18	18
Washington	Health	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	512	10	$697	35%	66%	$0.20	4	4
Washington	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	601	25	$7	15%	90%	$0.00	2	2
Washington	Health	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	548	25	$110	15%	70%	$0.01	1	1
Washington	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	213	15	$406	0.0%	94%	$0.22	0.00	0.00
Washington	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	26	5	$519	95%	81%	$4.62	0.03	0.03
Washington	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	161	10	$2,158	25%	70%	$1.94	0.04	0.04
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	566	20	$889	100%	N/A	$0.16	0.82	0.83
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	94	20	$148	100%	N/A	$0.16	0.00	0.00
Washington	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	346	20	$543	100%	N/A	$0.16	0.00	0.00

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Washington	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	213	15	$1,067	15%	98%	$0.58	0.04	0.04
Washington	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	170	7	$266	10%	94%	$0.29	0.02	0.02
Washington	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	85	13	$193	75%	65%	$0.29	0.06	0.06
Washington	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	213	15	$533	75%	76%	$0.17	0.18	0.18
Washington	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	95	12	$5,450	2.5%	75%	$4.43	0.00	0.00
Washington	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	213	40	$30,896	2.0%	**%	$12.82	0.00	0.00
Washington	Health	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	263	30	$263	50%	95%	$0.06	0.13	0.13
Washington	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	268	25	$7	80%	90%	$0.00	0.23	0.23
Washington	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	276	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	530	15	$242	100%	N/A	$0.05	83	110
Washington	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	3,566	15	$-5215.5255	10%	N/A	$-0.23	27	36
Washington	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	145	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	279	15	$194	100%	N/A	$0.08	2	2
Washington	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	1,879	15	$-3896.3751	10%	N/A	$-0.33	0.71	0.74
Washington	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	654	15	$762	5.0%	94%	$0.14	22	22
Washington	Health	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,963	15	$9,272	15%	67%	$0.40	145	145
Washington	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	654	15	$1,067	15%	98%	$0.19	68	68
Washington	Health	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	981	10	$1,729	10%	30%	$0.26	20	20
Washington	Health	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	654	5	$488	95%	72%	$0.18	314	314
Washington	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,635	15	$6,354	50%	94%	$0.45	502	502

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Washington	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	654	15	$533	75%	76%	$0.07	214	214
Washington	Health	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	163	18	$732	45%	65%	$0.35	26	26
Washington	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	294	12	$5,450	2.5%	75%	$1.80	2	2
Washington	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	654	40	$30,896	2.0%	**%	$4.18	0.00	0.00
Washington	Health	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	327	12	$79	10%	39%	$0.02	6	6
Washington	Health	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	14	25	$2,379	45%	65%	$0.59	2	2
Washington	Health	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$823	25%	85%	.	0.00	0.00
Washington	Health	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	274	20	$590	45%	60%	$0.16	39	39
Washington	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,867	15%	84%	.	0.00	0.00
Washington	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$884	15%	90%	.	0.00	0.00
Washington	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$736	10%	85%	.	0.00	0.00
Washington	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$7,048	10%	71%	.	0.00	0.00
Washington	Health	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	817	7	$601	90%	85%	$0.10	333	333
Washington	Health	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	512	10	$697	35%	66%	$0.20	56	56
Washington	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	825	25	$7	15%	90%	$0.00	52	52
Washington	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	753	25	$110	15%	70%	$0.01	36	36
Washington	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	319	15	$406	0.0%	94%	$0.15	0.00	0.00
Washington	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	319	15	$1,067	15%	98%	$0.39	1	1
Washington	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	798	15	$6,354	50%	94%	$0.93	9	9
Washington	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	319	15	$533	75%	76%	$0.13	4	4
Washington	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	143	12	$5,450	2.5%	75%	$3.43	0.05	0.05
Washington	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	319	40	$30,896	2.0%	**%	$8.56	0.00	0.00
Washington	Health	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	394	30	$394	50%	95%	$0.06	2	2
Washington	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	402	25	$7	80%	90%	$0.00	5	5
Washington	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	7	6	$0.17	100%	N/A	$0.00	7	7
Washington	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	7	6	$0.17	100%	N/A	$0.00	0.26	0.26
Washington	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	57	4	$64	100%	N/A	$0.32	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	57	4	$64	100%	N/A	$0.32	0.71	0.71
Washington	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	9	20	$0.25	100%	N/A	$0.00	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.51	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	9	20	$0.51	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	12	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	15	20	$3	100%	N/A	$0.02	2	2
Washington	Health	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	40	20	$9	8.8%	100%	$0.02	3	3
Washington	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	9	20	$0.25	100%	N/A	$0.00	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.51	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	9	20	$0.51	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	12	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	Health	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	15	20	$3	100%	N/A	$0.02	0.17	0.18
Washington	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	1,047	15	$991	100%	N/A	$0.11	29	35
Washington	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	634	15	$762	5.0%	94%	$0.14	1	1
Washington	Health	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	4,922	15	$9,272	15%	67%	$0.22	29	29
Washington	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	634	15	$1,067	15%	98%	$0.20	5	5
Washington	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,640	15	$533	75%	76%	$0.04	52	52
Washington	Health	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	410	18	$732	45%	65%	$0.19	6	6
Washington	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,509	14	$5,246	5.0%	94%	$0.42	3	3
Washington	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	738	12	$5,450	2.5%	75%	$0.97	0.72	0.72
Washington	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	634	40	$30,896	2.0%	**%	$4.31	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	4,104	30	$61,443	5.0%	N/A	$1.37	1	2
Washington	Health	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,230	12	$79	10%	39%	$0.01	2	2
Washington	Health	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,653	25	$2,379	45%	65%	$0.14	25	25
Washington	Health	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	253	25	$823	25%	85%	$0.32	2	2
Washington	Health	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	689	20	$590	45%	60%	$0.09	9	9
Washington	Health	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,692	25	$2,867	15%	84%	$0.11	16	16
Washington	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	524	25	$884	15%	90%	$0.17	3	3
Washington	Health	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$736	10%	85%	.	0.00	0.00
Washington	Health	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$7,048	10%	71%	.	0.00	0.00
Washington	Health	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,051	7	$601	90%	85%	$0.05	76	76
Washington	Health	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	512	10	$697	35%	66%	$0.20	5	5
Washington	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,070	25	$7	15%	90%	$0.00	12	12
Washington	Health	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,888	25	$110	15%	70%	$0.01	8	8
Washington	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	606	15	$793	100%	N/A	$0.15	0.78	0.80
Washington	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	349	15	$406	0.0%	94%	$0.14	0.00	0.00
Washington	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	349	15	$1,067	15%	98%	$0.36	0.10	0.10
Washington	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	903	15	$533	75%	76%	$0.07	1	1
Washington	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	831	14	$5,246	5.0%	94%	$0.76	0.07	0.07
Washington	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	406	12	$5,450	2.5%	75%	$1.77	0.01	0.01
Washington	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	349	40	$30,896	2.0%	**%	$7.82	0.00	0.00
Washington	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	2,342	30	$31,600	5.0%	N/A	$1.22	0.08	0.08
Washington	Health	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	139	25	$823	75%	85%	$0.58	0.12	0.12
Washington	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	288	25	$884	35%	90%	$0.30	0.12	0.12
Washington	Health	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,117	30	$1,117	50%	95%	$0.09	0.74	0.74

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Washington	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,140	25	$7	80%	90%	$0.00	1	1
Washington	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	285	8	$79	5.0%	95%	$0.05	14	14
Washington	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	383	8	$375	75%	70%	$0.17	221	221
Washington	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	318	15	$430	62%	90%	$0.16	196	196
Washington	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	142	8	$557	90%	42%	$0.66	46	46
Washington	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	3	13	$4	75%	95%	$0.19	2	2
Washington	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,778	17	$1,887	5.0%	95%	$0.07	145	145
Washington	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	285	8	$79	5.0%	95%	$0.05	0.51	0.51
Washington	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	383	8	$375	75%	70%	$0.17	7	7
Washington	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	318	15	$430	62%	90%	$0.16	6	6
Washington	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	142	8	$557	90%	42%	$0.66	1	1
Washington	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	3	13	$4	75%	95%	$0.19	0.08	0.08
Washington	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,778	17	$1,887	5.0%	95%	$0.07	4	4
Washington	Health	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	317	10	$253	25%	95%	$0.12	76	76
Washington	Health	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,872	8	$3,050	15%	51%	$0.18	222	222
Washington	Health	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,154	8	$2,287	15%	51%	$0.18	164	164
Washington	Health	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	74	6	$27	15%	80%	$0.05	9	9
Washington	Health	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	45	6	$23	10%	80%	$0.09	3	3
Washington	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	387	13	$1,164	100%	N/A	$0.38	0.00	0.00
Washington	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	502	13	$-411.72797	100%	N/A	$-0.14	0.00	0.00
Washington	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,355	13	$1,393	47%	N/A	$0.16	0.00	0.00
Washington	Health	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,276	8	$557	75%	42%	$0.07	395	395
Washington	Health	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	1,189	8	$49	10%	100%	$0.01	114	114

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Washington	Health	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	62	15	$34	100%	N/A	$0.76	0.00	0.00
Washington	Health	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	78	15	$114	95%	N/A	$-0.90	35	36
Washington	Health	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	69	16	$775	50%	N/A	$-1.49	1	1
Washington	Health	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	43	11	$9	25%	N/A	$-1.52	0.00	0.00
Washington	Health	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$494	100%	N/A	$-6.50	0.00	0.00
Washington	Health	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	28	8	$557	75%	42%	$3.35	8	8
Washington	Health	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	26	8	$49	10%	95%	$0.32	2	2
Washington	Health	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	443	11	$172	95%	50%	$0.05	232	232
Washington	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	88	13	$75	95%	98%	$0.11	91	91
Washington	Health	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	288	10	$253	25%	95%	$0.13	2	2
Washington	Health	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,000	8	$3,050	15%	51%	$0.26	5	5
Washington	Health	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,500	8	$2,287	15%	51%	$0.26	3	3
Washington	Health	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	57	6	$14	15%	80%	$0.01	0.24	0.24
Washington	Health	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	25	6	$10	15%	80%	$0.06	0.10	0.10
Washington	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	88	13	$75	95%	98%	$0.11	2	2
Washington	Health	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,152	13	$855	100%	N/A	$0.09	39	39
Washington	Health	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	1,781	30	$1,781	50%	95%	$0.09	21	21
Washington	Health	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,159	8	$557	75%	42%	$0.08	11	11
Washington	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,595	4	$81	85%	N/A	$-0.01	0.00	443
Washington	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,519	1	$54	100%	N/A	$0.00	0.00	0.00

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Washington	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	2,007	1	$42	100%	N/A	$-0.01	0.00	0.00
Washington	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,666	12	$1,014	15%	N/A	$0.01	84	547
Washington	Health	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	447	8	$557	75%	42%	$0.21	58	58
Washington	Health	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	417	8	$49	10%	95%	$0.02	16	16
Washington	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	9	7	$2	10%	90%	$0.05	0.92	0.92
Washington	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	12	4	$0.00	10%	45%	$0.00	0.60	0.60
Washington	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	91	10	$0.45	95%	75%	$0.00	72	72
Washington	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	41	10	$29	95%	86%	$0.10	37	37
Washington	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	31	4	$0.45	5.0%	86%	$0.00	1	1
Washington	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	203	4	$40	60%	90%	$0.06	121	121
Washington	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	9	7	$2	10%	90%	$0.05	0.03	0.03
Washington	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	12	4	$0.00	10%	45%	$0.00	0.02	0.02
Washington	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	91	10	$0.45	95%	75%	$0.00	2	2
Washington	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	41	10	$29	95%	86%	$0.10	1	1
Washington	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	31	4	$0.45	5.0%	86%	$0.00	0.05	0.05
Washington	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	203	4	$40	60%	90%	$0.06	4	4
Washington	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	24	6	$26	100%	N/A	$0.23	0.79	0.79
Washington	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	24	6	$26	100%	N/A	$0.23	0.04	0.04
Washington	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	116	6	$13	100%	N/A	$0.02	11	11
Washington	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	116	6	$13	100%	N/A	$0.02	0.00	0.00
Washington	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	87	8	$7	15%	45%	$0.01	2	2
Washington	Health	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	146	15	$22	5.0%	90%	$0.02	2	2
Washington	Health	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	47	15	$14	5.0%	90%	$0.04	0.83	0.83
Washington	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	97	10	$81	2.5%	80%	$0.12	0.76	0.76
Washington	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	133	10	$110	2.5%	80%	$0.12	1	1
Washington	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	25	10	$3,300	5.0%	68%	$18.57	0.33	0.33

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Washington	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	14	8	$1	5.0%	95%	$0.02	0.26	0.26
Washington	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	13	12	$13	95%	77%	$0.13	3	3
Washington	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	121	3	$19	10%	85%	$0.06	3	3
Washington	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	10	12	$-2.5814914	95%	81%	$-0.03	3	3
Washington	Health	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	54	13	$7	5.0%	90%	$0.02	0.93	0.93
Washington	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	19	4	$14	15%	20%	$0.20	0.22	0.22
Washington	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	2	10	$0.52	1.0%	85%	$0.03	0.00	0.00
Washington	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	11	15	$10	2.5%	95%	$0.10	0.10	0.10
Washington	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	87	8	$7	15%	45%	$0.01	0.07	0.07
Washington	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	97	10	$81	2.5%	80%	$0.12	0.02	0.02
Washington	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	133	10	$110	2.5%	80%	$0.12	0.03	0.03
Washington	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	25	10	$3,300	5.0%	68%	$18.57	0.01	0.01
Washington	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	14	8	$1	5.0%	95%	$0.02	0.00	0.00
Washington	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	13	12	$13	95%	77%	$0.13	0.13	0.13
Washington	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	60	3	$7	5.0%	90%	$0.04	0.03	0.03
Washington	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	10	12	$-2.5814914	95%	81%	$-0.03	0.11	0.11
Washington	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	19	4	$14	15%	20%	$0.20	0.00	0.00
Washington	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	2	10	$0.52	1.0%	85%	$0.03	0.00	0.00
Washington	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	11	15	$10	2.5%	95%	$0.10	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	33	20	$11	100%	N/A	$0.04	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	59	20	$25	100%	N/A	$0.04	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	84	20	$324	100%	N/A	$0.39	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	104	20	$434	100%	N/A	$0.42	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	118	20	$64	100%	N/A	$0.06	23	26
Washington	Health	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	496	20	$88	8.8%	100%	$0.02	41	41
Washington	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	33	20	$11	100%	N/A	$0.04	0.00	0.00

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Washington	Health	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	59	20	$25	100%	N/A	$0.04	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	84	20	$324	100%	N/A	$0.39	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	104	20	$434	100%	N/A	$0.42	0.00	0.00
Washington	Health	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	118	20	$64	100%	N/A	$0.06	1	1
Washington	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	45	9	$5	100%	N/A	$0.02	40	41
Washington	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	155	4	$581	10%	50%	$1.06	6	6
Washington	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	45	9	$5	100%	N/A	$0.02	1	1
Washington	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	154	4	$581	10%	50%	$1.07	0.23	0.23
Washington	Health	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	4,968	15	$9,272	15%	67%	$0.17	97	97
Washington	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,656	15	$533	75%	76%	$0.03	176	176
Washington	Health	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	414	18	$732	45%	65%	$0.15	21	21
Washington	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,484	14	$5,246	5.0%	94%	$0.26	20	20
Washington	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	745	12	$5,450	2.5%	75%	$0.76	2	2
Washington	Health	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,656	12	$79	10%	39%	$0.01	11	11
Washington	Health	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,712	25	$2,379	45%	65%	$0.09	137	137
Washington	Health	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	381	25	$823	25%	85%	$0.21	13	13
Washington	Health	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	695	20	$590	45%	60%	$0.07	30	30
Washington	Health	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,982	25	$2,867	15%	84%	$0.07	81	81
Washington	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	741	25	$884	15%	90%	$0.12	15	15
Washington	Health	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$736	10%	85%	.	0.00	0.00
Washington	Health	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$7,048	10%	71%	.	0.00	0.00
Washington	Health	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,070	7	$601	90%	85%	$0.04	249	249
Washington	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,089	25	$7	15%	90%	$0.00	40	40
Washington	Health	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,905	25	$110	15%	70%	$0.00	27	27
Washington	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,033	15	$533	75%	76%	$0.05	3	3
Washington	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,550	14	$5,246	5.0%	94%	$0.41	0.45	0.45
Washington	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	465	12	$5,450	2.5%	75%	$1.28	0.05	0.05
Washington	Health	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	238	25	$823	75%	85%	$0.34	0.69	0.69
Washington	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	462	25	$884	35%	90%	$0.19	0.65	0.65

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Washington	Health	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,278	30	$1,278	50%	95%	$0.08	2	2
Washington	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,304	25	$7	80%	90%	$0.00	4	4
Washington	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	64	10	$8	100%	N/A	$0.02	33	33
Washington	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	64	10	$8	100%	N/A	$0.02	1	1
Washington	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	3,666	10	$373	5.0%	90%	$0.01	182	182
Washington	Health	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,499	15	$9,272	15%	67%	$0.20	607	607
Washington	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	130	18	$297	95%	85%	$0.24	116	116
Washington	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	186	15	$20	95%	76%	$0.01	141	141
Washington	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	4,674	20	$339	55%	45%	$0.01	1,211	1,211
Washington	Health	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	53	7	$15	65%	25%	$0.05	0.00	0.00
Washington	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	293	18	$1,705	65%	59%	$0.62	124	124
Washington	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	3,068	10	$373	5.0%	90%	$0.02	5	5
Washington	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	130	18	$297	95%	85%	$0.24	3	3
Washington	Health	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	2,287	50	$7,625	24%	98%	$0.29	14	14
Washington	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	156	15	$20	95%	76%	$0.02	4	4
Washington	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	3,912	20	$339	55%	45%	$0.01	25	25
Washington	Health	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,897	30	$1,897	50%	95%	$0.09	22	22
Washington	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	245	18	$1,705	65%	59%	$0.74	3	3
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,536	15	$481	75%	N/A	$0.04	0.00	0.00
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,554	15	$806	75%	N/A	$0.05	0.00	0.00

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Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,612	15	$1,390	75%	N/A	$0.07	0.32	0.36
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,640	15	$1,156	75%	N/A	$0.06	1	1
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,536	15	$481	75%	N/A	$0.04	0.00	0.00
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,554	15	$806	75%	N/A	$0.05	0.00	0.00
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,612	15	$1,390	75%	N/A	$0.07	0.01	0.01
Washington	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,640	15	$1,156	75%	N/A	$0.06	0.07	0.07
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$-0.23	0.79	0.80
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	7	14	$4	5.0%	94%	$-0.48	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	11	14	$11	5.0%	97%	$-0.24	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	14	14	$24	5.0%	99%	$-0.08	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	4	14	$12	5.0%	99%	$-0.66	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	2	14	$8	5.0%	99%	$-1.14	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	99	10	$847	55%	94%	$1.24	1	1
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$11	75%	35%	$0.41	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	75%	35%	$0.42	0.01	0.01
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	6	12	$19	75%	55%	$0.40	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.40	0.05	0.05
Washington	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	118	12	$67	10%	95%	$0.07	0.39	0.40
Washington	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	108	12	$67	10%	94%	$0.07	0.35	0.36
Washington	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	397	25	$2,000	2.5%	100%	$0.50	0.33	0.33
Washington	Health	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	19	12	$63	80%	70%	$0.42	0.37	0.37
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	31	9	$21	95%	25%	$0.07	0.26	0.26
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	64	4	$19	95%	83%	$0.05	1	1
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	64	10	$2	95%	85%	$-0.13	1	1
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	165	10	$22	95%	62%	$-0.12	3	3
Washington	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	49	10	$299	75%	95%	$0.84	1	1
Washington	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	226	10	$81	2.5%	94%	$0.05	0.15	0.15
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$-0.23	0.02	0.02
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	7	14	$4	5.0%	94%	$-0.48	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	11	14	$11	5.0%	97%	$-0.24	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	14	14	$24	5.0%	99%	$-0.08	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	4	14	$12	5.0%	99%	$-0.66	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	2	14	$8	5.0%	99%	$-1.14	0.00	0.00

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Washington	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	99	10	$847	55%	94%	$1.24	0.06	0.06
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$11	75%	35%	$0.41	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	75%	35%	$0.42	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	6	12	$19	75%	55%	$0.40	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.40	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	118	12	$67	10%	95%	$0.07	0.01	0.01
Washington	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	108	12	$67	10%	94%	$0.07	0.01	0.01
Washington	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	397	25	$1,600	2.5%	100%	$0.40	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	31	9	$0.15	95%	25%	$-0.04	0.00	0.00
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	64	4	$19	95%	83%	$0.05	0.06	0.06
Washington	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	64	10	$2	95%	85%	$-0.13	0.06	0.06
Washington	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	49	10	$299	75%	95%	$0.84	0.04	0.04
Washington	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	226	10	$81	2.5%	94%	$0.05	0.00	0.00
Washington	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,546	15	$2,841	75%	N/A	$0.25	105	111
Washington	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	2,411	15	$4,321	75%	N/A	$0.23	498	530
Washington	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	59	15	$180	100%	N/A	$0.35	0.00	0.00
Washington	Health	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	59	15	$180	100%	N/A	$0.35	0.00	0.00
Washington	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,546	15	$2,841	75%	N/A	$0.25	4	4

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Washington	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	2,411	15	$4,321	75%	N/A	$0.23	23	23
Washington	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	59	15	$180	100%	N/A	$0.35	0.00	0.00
Washington	Health	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	59	15	$180	100%	N/A	$0.35	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$-0.23	5	7
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	7	14	$4	5.0%	94%	$-0.48	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	11	14	$11	5.0%	97%	$-0.24	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	14	14	$24	5.0%	99%	$-0.08	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	4	14	$12	5.0%	99%	$-0.66	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	2	14	$8	5.0%	99%	$-1.14	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	212	10	$847	75%	94%	$0.58	38	38
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$11	75%	35%	$0.41	0.00	0.01
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	75%	35%	$0.42	0.08	0.09
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	6	12	$19	75%	55%	$0.40	0.00	0.05
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.40	0.41	0.49
Washington	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	118	12	$67	10%	95%	$0.07	2	3

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	108	12	$67	10%	95%	$0.07	2	3
Washington	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	850	25	$2,000	2.5%	100%	$0.23	5	5
Washington	Health	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	42	12	$63	80%	70%	$0.20	5	5
Washington	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	67	9	$21	95%	25%	$0.01	4	4
Washington	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	64	4	$19	95%	83%	$0.05	13	13
Washington	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	64	10	$2	95%	85%	$-0.13	13	13
Washington	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	165	10	$22	95%	62%	$-0.12	25	25
Washington	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	106	10	$299	75%	95%	$0.37	19	19
Washington	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	484	10	$81	2.5%	94%	$0.02	2	2
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$-0.23	0.16	0.16
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	7	14	$4	5.0%	94%	$-0.48	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	11	14	$11	5.0%	97%	$-0.24	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	14	14	$24	5.0%	99%	$-0.08	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	4	14	$12	5.0%	99%	$-0.66	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	2	14	$8	5.0%	99%	$-1.14	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	212	10	$847	75%	94%	$0.58	1	1
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$11	75%	35%	$0.41	0.00	0.00

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Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	75%	35%	$0.42	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	6	12	$19	75%	55%	$0.40	0.00	0.00
Washington	Health	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.40	0.01	0.01
Washington	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	118	12	$67	10%	95%	$0.07	0.08	0.08
Washington	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	108	12	$67	10%	95%	$0.07	0.07	0.07
Washington	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	850	25	$1,600	2.5%	100%	$0.19	0.04	0.04
Washington	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	67	9	$0.15	95%	25%	$-0.03	0.11	0.11
Washington	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	64	4	$19	95%	83%	$0.05	0.36	0.36
Washington	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	64	10	$2	95%	85%	$-0.13	0.37	0.37
Washington	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	106	10	$299	75%	95%	$0.37	0.54	0.54
Washington	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	484	10	$81	2.5%	94%	$0.02	0.07	0.07
Washington	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	7,672	4	$876	100%	N/A	$0.03	201	235
Washington	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	11,837	4	$876	95%	30%	$0.02	548	548
Washington	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	7,672	4	$876	100%	N/A	$0.03	3	3
Washington	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	11,837	4	$876	95%	30%	$0.02	19	19
Washington	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	4,102	15	$7,603	75%	94%	$0.22	96	96
Washington	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	512	5	$5,180	95%	81%	$2.39	12	12
Washington	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	3,101	10	$23,917	25%	70%	$1.12	16	16
Washington	Large Office	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	2,051	15	$55,530	45%	45%	$3.15	12	12
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	1,656	20	$1,670	100%	N/A	$0.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	3,567	20	$3,597	100%	N/A	$0.10	11	15
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	Existing	6,752	20	$13,192	75%	N/A	$0.20	67	93
Washington	Large Office	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	12,307	15	$92,454	15%	67%	$0.18	37	37
Washington	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	4,102	15	$8,946	80%	98%	$0.25	93	93
Washington	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	3,282	7	$2,956	10%	94%	$0.17	8	8
Washington	Large Office	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	5,743	15	$264	65%	35%	$0.01	34	34
Washington	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	1,641	13	$2,140	75%	65%	$0.16	20	20
Washington	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,102	15	$5,322	75%	76%	$0.03	58	58
Washington	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	4,102	40	$58,922	2.0%	**%	$5.58	0.00	0.00
Washington	Large Office	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,051	12	$987	10%	39%	$0.01	1	1
Washington	Large Office	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	93	25	$19,936	45%	57%	$0.08	0.57	0.57
Washington	Large Office	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$6,901	25%	85%	.	0.00	0.00
Washington	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	70%	.	0.00	0.00
Washington	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Washington	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	69%	.	0.00	0.00
Washington	Large Office	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WA State Code)	No Insulation	Per Building	Existing	615	15	$624	65%	45%	$0.12	4	4
Washington	Large Office	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,128	7	$5,995	90%	85%	$0.05	92	92
Washington	Large Office	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	5,283	10	$8,711	35%	66%	$0.24	26	26
Washington	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	5,176	25	$92	15%	90%	$0.00	14	14
Washington	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,721	25	$1,383	15%	70%	$0.01	10	10
Washington	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,510	15	$4,055	0.0%	94%	$0.19	0.00	0.00
Washington	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	313	5	$5,180	95%	81%	$3.91	0.27	0.27
Washington	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	1,897	10	$21,525	25%	70%	$1.64	0.37	0.37
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	1,137	20	$1,503	100%	N/A	$0.13	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	2,449	20	$3,237	100%	N/A	$0.13	0.47	0.48
Washington	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	New	4,636	20	$11,804	75%	N/A	$0.26	2	2
Washington	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,510	15	$8,946	80%	98%	$0.42	2	2
Washington	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	2,008	7	$2,661	10%	94%	$0.25	0.19	0.19
Washington	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	1,004	13	$1,926	75%	65%	$0.24	0.50	0.50
Washington	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,510	15	$5,322	75%	76%	$0.06	1	1
Washington	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,510	40	$58,922	2.0%	**%	$9.12	0.00	0.00
Washington	Large Office	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,510	15	$30,412	10%	75%	$0.36	0.17	0.17
Washington	Large Office	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	4,319	30	$4,319	35%	95%	$0.02	0.99	0.99
Washington	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	3,167	25	$92	80%	90%	$0.00	1	1
Washington	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	3,294	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	5,125	15	$8,598	100%	N/A	$0.20	19	28
Washington	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	41,516	15	$-58180.191	10%	N/A	$-0.21	10	15
Washington	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	2,255	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	3,509	15	$6,878	100%	N/A	$0.23	0.66	0.69
Washington	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	28,423	15	$-44342.126	10%	N/A	$-0.24	0.38	0.40
Washington	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	6,740	15	$7,603	75%	94%	$0.13	134	134
Washington	Large Office	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	20,222	15	$92,454	15%	67%	$0.16	53	53
Washington	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	6,740	15	$8,946	35%	98%	$0.15	58	58
Washington	Large Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	10,111	10	$17,244	10%	20%	$0.25	4	4

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	6,740	5	$4,866	95%	72%	$0.17	113	113
Washington	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	16,852	15	$63,359	50%	94%	$0.44	181	181
Washington	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	6,740	15	$5,322	75%	76%	$0.03	77	77
Washington	Large Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,685	18	$7,299	45%	65%	$0.14	9	9
Washington	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	6,740	40	$58,922	2.0%	**%	$3.40	2	2
Washington	Large Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,370	12	$987	10%	39%	$0.01	2	2
Washington	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	153	25	$19,936	45%	57%	$0.08	0.74	0.74
Washington	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$6,901	25%	85%	.	0.00	0.00
Washington	Large Office	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	2,831	20	$5,883	45%	59%	$0.06	14	14
Washington	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	70%	.	0.00	0.00
Washington	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Washington	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	69%	.	0.00	0.00
Washington	Large Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	8,426	7	$5,995	90%	85%	$0.04	120	120
Washington	Large Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	5,283	10	$8,711	35%	66%	$0.24	20	20
Washington	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	8,505	25	$92	15%	90%	$0.00	18	18
Washington	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,757	25	$1,383	15%	70%	$0.01	13	13
Washington	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	4,489	15	$4,055	0.0%	94%	$0.11	0.00	0.00
Washington	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	4,489	15	$8,946	35%	98%	$0.23	1	1
Washington	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	11,224	15	$63,359	50%	94%	$0.66	4	4
Washington	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,489	15	$5,322	75%	76%	$0.05	2	2
Washington	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	4,489	40	$58,922	2.0%	**%	$5.10	0.03	0.03
Washington	Large Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	4,489	15	$30,412	10%	75%	$0.30	0.25	0.25
Washington	Large Office	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	7,726	30	$7,726	35%	95%	$0.04	1	1
Washington	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	5,665	25	$92	80%	90%	$0.00	2	2
Washington	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	115	6	$2	100%	N/A	$0.00	19	19
Washington	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	115	6	$2	100%	N/A	$0.00	0.67	0.67
Washington	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	1,036	4	$1,169	100%	N/A	$0.32	9	9
Washington	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	1,036	4	$1,169	100%	N/A	$0.32	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	41	20	$1	100%	N/A	$0.00	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	27	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	42	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	54	20	$7	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	63	20	$12	100%	N/A	$0.02	1	1
Washington	Large Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	173	20	$41	8.8%	100%	$0.02	2	2
Washington	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	41	20	$1	100%	N/A	$0.00	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	27	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	42	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	54	20	$7	100%	N/A	$0.01	0.00	0.00
Washington	Large Office	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	63	20	$12	100%	N/A	$0.02	0.12	0.13
Washington	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	10,292	15	$9,890	100%	N/A	$0.11	0.00	0.00
Washington	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	7,414	15	$7,603	75%	94%	$0.12	79	79
Washington	Large Office	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	44,159	15	$92,454	15%	67%	$0.24	65	65
Washington	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	7,414	15	$8,946	35%	98%	$0.14	36	36
Washington	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	14,719	15	$5,322	75%	76%	$0.04	117	117
Washington	Large Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	3,679	18	$7,299	45%	65%	$0.21	14	14
Washington	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	10,958	14	$27,584	5.0%	94%	$0.30	6	6
Washington	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	7,414	40	$58,922	2.0%	**%	$3.09	1	1
Washington	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	40,825	30	$12,668	5.0%	N/A	$1.38	0.00	0.00
Washington	Large Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	11,039	12	$987	10%	39%	$0.01	5	5

Table C-2.2. Commercial Measure Details

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Washington	Large Office	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	12,065	25	$19,936	45%	57%	$0.16	40	40
Washington	Large Office	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	1,838	25	$6,901	25%	85%	$0.37	4	4
Washington	Large Office	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	6,182	20	$5,883	45%	59%	$0.10	20	20
Washington	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	18,396	25	$24,026	15%	70%	$0.13	24	24
Washington	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	3,594	25	$7,412	15%	90%	$0.20	6	6
Washington	Large Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	69%	.	0.00	0.00
Washington	Large Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	18,399	7	$5,995	90%	85%	$0.06	174	174
Washington	Large Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	5,283	10	$8,711	35%	66%	$0.24	13	13
Washington	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	18,572	25	$92	15%	90%	$0.00	27	27
Washington	Large Office	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	16,939	25	$1,383	15%	70%	$0.01	19	19
Washington	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	5,826	15	$7,912	100%	N/A	$0.16	0.00	0.00
Washington	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	3,823	15	$4,055	0.0%	94%	$0.12	0.00	0.00
Washington	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	3,823	15	$8,946	35%	98%	$0.27	0.70	0.70
Washington	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,591	15	$5,322	75%	76%	$0.08	2	2
Washington	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	5,651	14	$27,584	5.0%	94%	$0.59	0.13	0.13
Washington	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	3,823	40	$58,922	2.0%	**%	$5.99	0.01	0.01
Washington	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	23,815	30	$15,097	5.0%	N/A	$1.20	0.00	0.00
Washington	Large Office	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	948	25	$6,901	75%	85%	$0.72	0.22	0.22
Washington	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	1,853	25	$7,412	35%	90%	$0.40	0.21	0.21
Washington	Large Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	7,591	15	$30,412	10%	75%	$0.47	0.27	0.27
Washington	Large Office	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	13,064	30	$13,064	35%	95%	$0.09	1	1
Washington	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	9,578	25	$92	80%	90%	$0.00	2	2
Washington	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	2,848	8	$792	5.0%	95%	$0.05	26	26
Washington	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,361	8	$1,087	75%	70%	$0.05	340	340
Washington	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,791	15	$3,772	62%	90%	$0.16	302	302
Washington	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,194	8	$5,563	90%	42%	$0.79	67	67

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	61	13	$92	75%	95%	$0.19	8	8
Washington	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	27,705	17	$18,825	5.0%	95%	$0.07	255	255
Washington	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	2,848	8	$792	5.0%	95%	$0.05	0.91	0.91
Washington	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,361	8	$1,087	75%	70%	$0.05	11	11
Washington	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,791	15	$3,772	62%	90%	$0.16	10	10
Washington	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,194	8	$5,563	90%	42%	$0.79	2	2
Washington	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	61	13	$92	75%	95%	$0.19	0.28	0.28
Washington	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	27,705	17	$18,825	5.0%	95%	$0.07	7	7
Washington	Large Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,960	10	$2,531	75%	95%	$0.19	225	225
Washington	Large Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	5,565	8	$12,789	30%	78%	$0.39	207	207
Washington	Large Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,173	8	$9,592	30%	78%	$0.39	0.00	0.00
Washington	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,699	13	$1,810	100%	N/A	$0.06	0.00	0.00
Washington	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,813	13	$8,823	100%	N/A	$0.23	530	548
Washington	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	11,009	13	$72,078	25%	N/A	$0.83	404	418
Washington	Large Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	7,547	8	$5,563	75%	42%	$0.12	369	369
Washington	Large Office	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	7,351	8	$591	10%	88%	$0.01	99	99
Washington	Large Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	702	15	$425	100%	N/A	$0.11	0.00	0.00
Washington	Large Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	866	15	$1,771	95%	N/A	$0.18	58	59
Washington	Large Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	771	25	$12,855	50%	N/A	$1.49	1	1
Washington	Large Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	490	17	$8	25%	N/A	$-0.08	0.00	0.00
Washington	Large Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	244	15	$8,147	100%	N/A	$3.39	0.00	0.00

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Washington	Large Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	280	8	$5,563	75%	42%	$3.34	15	15
Washington	Large Office	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	273	8	$591	10%	88%	$0.36	4	4
Washington	Large Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	712	11	$277	95%	50%	$0.05	65	65
Washington	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	142	13	$122	95%	98%	$0.11	25	25
Washington	Large Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,668	10	$2,531	75%	95%	$0.22	7	7
Washington	Large Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,145	8	$12,789	30%	78%	$0.52	5	5
Washington	Large Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,108	8	$9,592	30%	78%	$0.52	0.00	0.00
Washington	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	142	13	$122	95%	98%	$0.11	0.80	0.80
Washington	Large Office	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	8,344	13	$7,927	100%	N/A	$0.12	50	50
Washington	Large Office	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	14,358	30	$14,358	35%	95%	$0.09	20	20
Washington	Large Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	6,424	8	$5,563	75%	42%	$0.15	11	11
Washington	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,648	4	$229	85%	N/A	$0.00	0.00	688
Washington	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,701	1	$152	100%	N/A	$0.00	0.00	0.00
Washington	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,996	1	$114	100%	N/A	$-0.00	0.00	0.00
Washington	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,775	12	$2,863	15%	N/A	$0.02	24	277
Washington	Large Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,117	8	$5,563	75%	42%	$0.84	17	17
Washington	Large Office	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	1,088	8	$591	10%	88%	$0.09	4	4
Washington	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	8	7	$2	10%	90%	$0.05	0.14	0.14
Washington	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	177	4	$0.00	75%	45%	$0.00	11	11
Washington	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	158	10	$0.77	95%	75%	$0.00	21	21
Washington	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	27	4	$4	5.0%	86%	$0.05	0.23	0.23

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Washington	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	6,082	4	$1,216	60%	90%	$0.06	637	637
Washington	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	8	7	$2	10%	90%	$0.05	0.00	0.00
Washington	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	177	4	$0.00	75%	45%	$0.00	0.40	0.40
Washington	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	158	10	$0.77	95%	75%	$0.00	0.75	0.75
Washington	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	27	4	$4	5.0%	86%	$0.05	0.00	0.00
Washington	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	6,082	4	$1,216	60%	90%	$0.06	22	22
Washington	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	359	6	$392	100%	N/A	$0.23	2	2
Washington	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	359	6	$392	100%	N/A	$0.23	0.10	0.10
Washington	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	1,654	6	$192	100%	N/A	$0.02	28	28
Washington	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	1,654	6	$192	100%	N/A	$0.02	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	141	20	$49	100%	N/A	$0.04	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	251	20	$107	100%	N/A	$0.04	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	359	20	$1,377	100%	N/A	$0.39	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	442	20	$1,847	100%	N/A	$0.42	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	501	20	$275	100%	N/A	$0.06	17	19
Washington	Large Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,111	20	$376	8.8%	100%	$0.02	30	30
Washington	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	141	20	$49	100%	N/A	$0.04	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	251	20	$107	100%	N/A	$0.04	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	359	20	$1,377	100%	N/A	$0.39	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	442	20	$1,847	100%	N/A	$0.42	0.00	0.00
Washington	Large Office	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	501	20	$275	100%	N/A	$0.06	1	1
Washington	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	684	9	$90	100%	N/A	$0.02	107	110
Washington	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	2,353	4	$8,822	10%	50%	$1.06	18	18
Washington	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	684	9	$90	100%	N/A	$0.02	3	4
Washington	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	2,345	4	$8,822	10%	50%	$1.07	0.61	0.61
Washington	Large Office	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	46,713	15	$92,454	15%	67%	$0.19	154	154
Washington	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	15,571	15	$5,322	75%	76%	$0.03	279	279
Washington	Large Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	3,892	18	$7,299	45%	65%	$0.16	34	34
Washington	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	23,356	14	$27,584	5.0%	94%	$0.14	32	32

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Washington	Large Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	15,571	12	$987	10%	39%	$0.01	17	17
Washington	Large Office	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	25,507	25	$19,936	45%	57%	$0.08	192	192
Washington	Large Office	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	3,588	25	$6,901	25%	85%	$0.19	21	21
Washington	Large Office	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	6,539	20	$5,883	45%	59%	$0.08	48	48
Washington	Large Office	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	37,443	25	$24,026	15%	70%	$0.06	108	108
Washington	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	6,969	25	$7,412	15%	90%	$0.11	25	25
Washington	Large Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$59,067	10%	69%	.	0.00	0.00
Washington	Large Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	19,464	7	$5,995	90%	85%	$0.05	399	399
Washington	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	19,646	25	$92	15%	90%	$0.00	64	64
Washington	Large Office	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	17,919	25	$1,383	15%	70%	$0.01	44	44
Washington	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,451	15	$5,322	75%	76%	$0.06	4	4
Washington	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	11,176	14	$27,584	5.0%	94%	$0.30	0.55	0.55
Washington	Large Office	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	1,717	25	$6,901	75%	85%	$0.40	0.84	0.84
Washington	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	3,335	25	$7,412	35%	90%	$0.22	0.80	0.80
Washington	Large Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	7,451	15	$30,412	10%	75%	$0.37	0.55	0.55
Washington	Large Office	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	12,822	30	$12,822	35%	95%	$0.07	3	3
Washington	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	9,401	25	$92	80%	90%	$0.00	5	5
Washington	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,077	10	$147	100%	N/A	$0.02	97	97
Washington	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,077	10	$147	100%	N/A	$0.02	3	3
Washington	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,707	10	$3,728	5.0%	90%	$0.03	172	172
Washington	Large Office	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	29,560	15	$92,454	15%	67%	$0.36	575	575
Washington	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,005	15	$201	95%	76%	$0.02	134	134
Washington	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	25,126	20	$3,386	55%	45%	$0.01	1,150	1,150
Washington	Large Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	537	7	$152	65%	25%	$0.05	0.00	0.00
Washington	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	17,255	10	$3,728	5.0%	90%	$0.03	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	27,371	50	$76,031	17%	98%	$0.24	22	22
Washington	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	880	15	$201	95%	76%	$0.03	3	3
Washington	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	22,000	20	$3,386	55%	45%	$0.02	25	25
Washington	Large Office	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	14,847	30	$14,847	35%	95%	$0.09	21	21
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,071	15	$915	75%	N/A	$0.02	0.00	0.00
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,128	15	$1,531	75%	N/A	$0.03	0.00	0.00
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,313	15	$2,641	75%	N/A	$0.04	0.12	0.12
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,402	15	$2,196	75%	N/A	$0.04	0.53	0.57
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,071	15	$915	75%	N/A	$0.02	0.00	0.00
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,128	15	$1,531	75%	N/A	$0.03	0.00	0.00
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,313	15	$2,641	75%	N/A	$0.04	0.00	0.00
Washington	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,402	15	$2,196	75%	N/A	$0.04	0.02	0.02
Washington	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	316	10	$8,448	55%	80%	$3.87	0.52	0.52
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$10	95%	35%	$0.41	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	95%	35%	$0.42	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	5	12	$17	95%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$10	95%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,265	25	$3,800	2.5%	100%	$0.30	0.11	0.11

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	63	12	$120	80%	30%	$0.25	0.05	0.05
Washington	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	100	9	$28	95%	25%	$0.01	0.08	0.08
Washington	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	0.42	0.42
Washington	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	0.79	0.79
Washington	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	158	10	$392	75%	85%	$0.32	0.37	0.37
Washington	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	316	10	$8,448	55%	80%	$3.87	0.01	0.01
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$10	95%	35%	$0.41	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	95%	35%	$0.42	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	5	12	$17	95%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$10	95%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,265	25	$3,040	2.5%	100%	$0.24	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	100	9	$0.20	95%	25%	$-0.03	0.00	0.00
Washington	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.01	0.01
Washington	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	158	10	$392	75%	85%	$0.32	0.01	0.01
Washington	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	4,922	15	$5,399	75%	N/A	$0.15	36	38
Washington	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,674	15	$8,210	75%	N/A	$0.14	174	182
Washington	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	188	15	$343	100%	N/A	$0.21	0.00	0.00
Washington	Large Office	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	188	15	$343	100%	N/A	$0.21	0.00	0.00
Washington	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	4,922	15	$5,399	75%	N/A	$0.15	1	1
Washington	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,674	15	$8,210	75%	N/A	$0.14	8	8

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	188	15	$343	100%	N/A	$0.21	0.00	0.00
Washington	Large Office	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	188	15	$343	100%	N/A	$0.21	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	676	10	$8,448	75%	94%	$1.81	13	13
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$10	75%	35%	$0.41	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	75%	35%	$0.42	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	5	12	$17	75%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$10	75%	55%	$0.40	0.03	0.04
Washington	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,707	25	$3,800	2.5%	100%	$0.14	1	1
Washington	Large Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	135	12	$120	80%	30%	$0.12	0.86	0.86
Washington	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	215	9	$28	95%	25%	$-0.01	1	1
Washington	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	3	3
Washington	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	5	5
Washington	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	338	10	$392	75%	85%	$0.13	6	6
Washington	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	676	10	$8,448	75%	94%	$1.81	0.36	0.36
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$10	75%	35%	$0.41	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	75%	35%	$0.42	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	5	12	$17	75%	55%	$0.40	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$10	75%	55%	$0.40	0.00	0.00
Washington	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,707	25	$3,040	2.5%	100%	$0.11	0.01	0.01
Washington	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	215	9	$0.20	95%	25%	$-0.03	0.03	0.03
Washington	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.08	0.08
Washington	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	338	10	$392	75%	85%	$0.13	0.16	0.16
Washington	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	1,155	4	$132	100%	N/A	$0.03	32	32
Washington	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	1,155	4	$132	100%	N/A	$0.03	0.58	0.58
Washington	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	4,634	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	7,208	15	$14,842	100%	N/A	$0.24	51	72
Washington	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	58,389	15	$-100434.36	10%	N/A	$-0.26	27	39
Washington	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	3,360	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	5,226	15	$11,874	100%	N/A	$0.26	1	1
Washington	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	42,336	15	$-76546.21	10%	N/A	$-0.28	1	1
Washington	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	9,480	15	$8,750	25%	94%	$0.11	115	115
Washington	Large Retail	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	28,441	15	$6,400	15%	67%	$0.44	145	145
Washington	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	9,480	15	$8,902	80%	98%	$0.11	364	364
Washington	Large Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	14,220	10	$29,768	10%	80%	$0.30	51	51
Washington	Large Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	9,480	5	$8,400	95%	72%	$0.21	290	290
Washington	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	23,700	15	$72,916	50%	94%	$0.36	463	463
Washington	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	9,480	15	$6,125	75%	76%	$0.08	197	197

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Washington	Large Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,370	18	$8,400	45%	65%	$0.38	24	24
Washington	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	9,480	40	$57,651	2.0%	**%	$2.40	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,740	12	$979	10%	39%	$0.03	6	6
Washington	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	431	25	$19,838	45%	65%	$4.55	4	4
Washington	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$6,867	25%	85%	.	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	3,981	20	$6,770	45%	59%	$0.17	36	36
Washington	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$23,908	15%	84%	.	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$7,376	15%	90%	.	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	69%	.	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	11,850	7	$6,900	90%	85%	$0.11	307	307
Washington	Large Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	6,327	10	$8,641	35%	66%	$0.20	44	44
Washington	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	11,961	25	$91	15%	90%	$0.00	48	48
Washington	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	10,910	25	$1,372	15%	70%	$0.01	33	33
Washington	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	6,687	15	$4,666	0.0%	94%	$0.08	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	6,687	15	$8,902	80%	98%	$0.16	9	9
Washington	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	16,719	15	$72,916	50%	94%	$0.51	12	12
Washington	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	6,687	15	$6,125	75%	76%	$0.11	5	5
Washington	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	6,687	40	$57,651	2.0%	**%	$3.41	0.00	0.00
Washington	Large Retail	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	9,445	30	$9,445	12%	98%	$0.09	1	1
Washington	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	8,438	25	$91	80%	90%	$0.00	7	7
Washington	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	131	6	$2	100%	N/A	$0.00	19	19
Washington	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	131	6	$2	100%	N/A	$0.00	0.67	0.67
Washington	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	156	4	$176	100%	N/A	$0.32	1	1
Washington	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	156	4	$176	100%	N/A	$0.32	0.30	0.30
Washington	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$0.45	100%	N/A	$0.00	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	11	20	$0.90	100%	N/A	$0.01	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$0.90	100%	N/A	$0.01	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	22	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	26	20	$5	100%	N/A	$0.02	0.60	0.69
Washington	Large Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	72	20	$17	8.8%	100%	$0.02	0.87	0.87
Washington	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	17	20	$0.45	100%	N/A	$0.00	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	11	20	$0.90	100%	N/A	$0.01	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	17	20	$0.90	100%	N/A	$0.01	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	22	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Large Retail	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	26	20	$5	100%	N/A	$0.02	0.04	0.05
Washington	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	11,440	15	$17,074	100%	N/A	$0.17	60	74
Washington	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	10,359	15	$8,750	25%	94%	$0.10	25	25
Washington	Large Retail	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	51,059	15	$6,400	15%	67%	$0.24	52	52
Washington	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	10,359	15	$8,902	80%	98%	$0.10	79	79
Washington	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	17,019	15	$6,125	75%	76%	$0.04	90	90
Washington	Large Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	4,254	18	$8,400	45%	65%	$0.21	11	11
Washington	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	9,990	14	$31,745	5.0%	94%	$0.38	4	4
Washington	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	10,359	40	$57,651	2.0%	**%	$2.20	0.00	0.00
Washington	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	47,049	30	$57,626	5.0%	N/A	$2.06	6	9
Washington	Large Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	12,764	12	$979	10%	39%	$0.01	4	4
Washington	Large Retail	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	15,742	25	$19,838	45%	65%	$0.12	40	40
Washington	Large Retail	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	1,676	25	$6,867	25%	85%	$0.41	3	3
Washington	Large Retail	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	7,148	20	$6,770	45%	59%	$0.10	16	16
Washington	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	15,307	25	$23,908	15%	84%	$0.15	16	16
Washington	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	3,003	25	$7,376	15%	90%	$0.24	3	3

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Washington	Large Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	69%	.	0.00	0.00
Washington	Large Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	21,274	7	$6,900	90%	85%	$0.06	134	134
Washington	Large Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	6,327	10	$8,641	35%	66%	$0.20	10	10
Washington	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	21,474	25	$91	15%	90%	$0.00	21	21
Washington	Large Retail	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	19,586	25	$1,372	15%	70%	$0.01	14	14
Washington	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	7,784	15	$13,659	100%	N/A	$0.20	1	2
Washington	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	6,507	15	$4,666	0.0%	94%	$0.08	0.00	0.00
Washington	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	6,507	15	$8,902	80%	98%	$0.16	1	1
Washington	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	10,691	15	$6,125	75%	76%	$0.07	2	2
Washington	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	6,275	14	$31,745	5.0%	94%	$0.61	0.09	0.09
Washington	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	6,507	40	$57,651	2.0%	**%	$3.50	0.00	0.00
Washington	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	32,414	30	$43,941	5.0%	N/A	$1.52	0.32	0.32
Washington	Large Retail	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	1,053	25	$6,867	75%	85%	$0.65	0.16	0.16
Washington	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	1,886	25	$7,376	35%	90%	$0.39	0.14	0.14
Washington	Large Retail	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	15,100	30	$15,100	12%	98%	$0.09	0.41	0.42
Washington	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	13,489	25	$91	80%	90%	$0.00	2	2
Washington	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	3,278	8	$912	5.0%	95%	$0.05	26	26
Washington	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	8,419	8	$1,084	75%	70%	$0.02	761	761
Washington	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	6,993	15	$9,449	62%	90%	$0.16	672	672
Washington	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,535	8	$6,402	45%	56%	$0.31	119	119
Washington	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	118	13	$176	75%	95%	$0.19	14	14
Washington	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	31,885	17	$21,665	5.0%	95%	$0.07	260	260
Washington	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	3,278	8	$912	5.0%	95%	$0.05	0.93	0.93
Washington	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	8,419	8	$1,084	75%	70%	$0.02	26	26
Washington	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	6,993	15	$9,449	62%	90%	$0.16	23	23
Washington	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,535	8	$6,402	45%	56%	$0.31	4	4

Table C-2.2. Commercial Measure Details

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Washington	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	118	13	$176	75%	95%	$0.19	0.48	0.48
Washington	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	31,885	17	$21,665	5.0%	95%	$0.07	8	8
Washington	Large Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	3,757	10	$2,913	5.0%	95%	$0.11	25	25
Washington	Large Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	9,931	8	$12,758	5.0%	84%	$0.22	58	58
Washington	Large Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	7,448	8	$9,568	5.0%	84%	$0.22	43	43
Washington	Large Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	846	6	$314	10%	80%	$0.05	9	9
Washington	Large Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	634	6	$322	5.0%	80%	$0.09	3	3
Washington	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	13,192	13	$13,909	100%	N/A	$0.13	1,314	1,325
Washington	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	9,892	13	$4,869	100%	N/A	$0.06	0.00	0.00
Washington	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	22,949	13	$22,019	25%	N/A	$0.67	731	737
Washington	Large Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	17,097	8	$6,402	5.0%	56%	$0.06	66	66
Washington	Large Retail	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	14,091	8	$800	10%	86%	$0.01	169	169
Washington	Large Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	5,923	15	$2,284	100%	N/A	$0.05	0.00	0.00
Washington	Large Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	7,283	15	$9,600	95%	N/A	$0.14	447	449
Washington	Large Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,499	16	$69,780	50%	N/A	$1.18	17	17
Washington	Large Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	4,139	11	$16	25%	N/A	$-0.01	0.00	0.00
Washington	Large Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,062	15	$44,216	100%	N/A	$2.41	0.00	0.00
Washington	Large Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,752	8	$6,402	5.0%	56%	$0.39	12	12
Washington	Large Retail	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	2,268	8	$800	10%	86%	$0.06	31	31
Washington	Large Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	3,078	11	$1,198	95%	50%	$0.05	251	251

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Washington	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	615	13	$527	95%	98%	$0.11	98	98
Washington	Large Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	4,350	10	$2,913	5.0%	95%	$0.10	1	1
Washington	Large Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	8,010	8	$12,758	5.0%	84%	$0.27	1	1
Washington	Large Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	6,007	8	$9,568	5.0%	84%	$0.27	1	1
Washington	Large Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	654	6	$160	10%	80%	$0.01	0.27	0.27
Washington	Large Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	361	6	$140	10%	80%	$0.06	0.15	0.15
Washington	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	615	13	$527	95%	98%	$0.11	2	2
Washington	Large Retail	Lighting Interior Other	Lighting Package, High Efficiency	13% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	28,278	13	$65,921	100%	N/A	$0.29	164	164
Washington	Large Retail	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	30,722	30	$30,722	12%	98%	$0.09	13	13
Washington	Large Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	19,795	8	$6,402	5.0%	56%	$0.05	2	2
Washington	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	69,583	4	$662	85%	N/A	$0.00	0.00	1,854
Washington	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	60,907	1	$438	100%	N/A	$0.00	0.00	0.00
Washington	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	17,190	1	$333	100%	N/A	$-0.00	0.00	0.00
Washington	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	70,153	12	$8,247	15%	N/A	$0.01	112	994
Washington	Large Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	5,348	8	$6,402	5.0%	56%	$0.20	7	7
Washington	Large Retail	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	4,407	8	$800	10%	86%	$0.03	18	18
Washington	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	18	7	$5	10%	90%	$0.05	0.29	0.29
Washington	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	202	4	$0.00	10%	45%	$0.00	1	1
Washington	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	42	10	$0.20	95%	75%	$0.00	5	5
Washington	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	64	4	$5	5.0%	86%	$0.02	0.47	0.47
Washington	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	700	4	$140	60%	90%	$0.06	65	65

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Washington	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	18	7	$5	10%	90%	$0.05	0.01	0.01
Washington	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	202	4	$0.00	10%	45%	$0.00	0.05	0.05
Washington	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	42	10	$0.20	95%	75%	$0.00	0.17	0.17
Washington	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	64	4	$5	5.0%	86%	$0.02	0.01	0.01
Washington	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	700	4	$140	60%	90%	$0.06	2	2
Washington	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	409	6	$445	100%	N/A	$0.23	2	2
Washington	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	409	6	$445	100%	N/A	$0.23	0.10	0.10
Washington	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	452	6	$52	100%	N/A	$0.02	6	6
Washington	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	452	6	$52	100%	N/A	$0.02	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	58	20	$20	100%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	104	20	$44	100%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	148	20	$570	100%	N/A	$0.39	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	183	20	$764	100%	N/A	$0.42	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	207	20	$114	100%	N/A	$0.06	6	7
Washington	Large Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	874	20	$156	8.8%	100%	$0.02	11	11
Washington	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	58	20	$20	100%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	104	20	$44	100%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	148	20	$570	100%	N/A	$0.39	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	183	20	$764	100%	N/A	$0.42	0.00	0.00
Washington	Large Retail	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	207	20	$114	100%	N/A	$0.06	0.54	0.54
Washington	Large Retail	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	37,695	15	$6,400	15%	67%	$0.33	51	51
Washington	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	12,565	15	$6,125	75%	76%	$0.06	93	93
Washington	Large Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	3,141	18	$8,400	45%	65%	$0.28	11	11
Washington	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	18,847	14	$31,745	5.0%	94%	$0.20	10	10
Washington	Large Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	12,565	12	$979	10%	39%	$0.01	5	5
Washington	Large Retail	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	29,157	25	$19,838	45%	65%	$0.07	102	102
Washington	Large Retail	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	2,895	25	$6,867	25%	85%	$0.23	6	6
Washington	Large Retail	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	5,277	20	$6,770	45%	59%	$0.13	15	15
Washington	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	30,214	25	$23,908	15%	84%	$0.08	42	42

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Washington	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	5,624	25	$7,376	15%	90%	$0.13	8	8
Washington	Large Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$58,777	10%	69%	.	0.00	0.00
Washington	Large Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	15,706	7	$6,900	90%	85%	$0.08	128	128
Washington	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	15,853	25	$91	15%	90%	$0.00	20	20
Washington	Large Retail	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	14,460	25	$1,372	15%	70%	$0.01	14	14
Washington	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,070	15	$6,125	75%	76%	$0.10	1	1
Washington	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	10,605	14	$31,745	5.0%	94%	$0.36	0.21	0.21
Washington	Large Retail	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	1,629	25	$6,867	75%	85%	$0.42	0.33	0.33
Washington	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	3,164	25	$7,376	35%	90%	$0.23	0.31	0.31
Washington	Large Retail	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	9,985	30	$9,985	12%	98%	$0.09	0.36	0.36
Washington	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	8,920	25	$91	80%	90%	$0.00	2	2
Washington	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,035	10	$142	100%	N/A	$0.02	83	83
Washington	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,035	10	$142	100%	N/A	$0.02	3	3
Washington	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	20,650	10	$4,291	5.0%	90%	$0.03	160	160
Washington	Large Retail	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	30,975	15	$6,400	15%	67%	$0.40	535	535
Washington	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	466	18	$1,125	95%	65%	$0.26	49	49
Washington	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,053	15	$231	95%	76%	$0.03	125	125
Washington	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	26,328	20	$3,897	55%	45%	$0.02	1,067	1,067
Washington	Large Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	618	7	$175	65%	25%	$0.05	0.00	0.00
Washington	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	17,010	10	$4,291	5.0%	90%	$0.04	4	4
Washington	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	466	18	$1,125	95%	65%	$0.26	1	1
Washington	Large Retail	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	26,250	50	$87,500	8.0%	98%	$0.29	8	8
Washington	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	867	15	$231	95%	76%	$0.03	3	3

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	21,687	20	$3,897	55%	45%	$0.02	22	22
Washington	Large Retail	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	12,012	30	$12,012	12%	98%	$0.09	5	5
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,986	15	$867	75%	N/A	$0.03	0.00	0.00
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,028	15	$1,450	75%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,165	15	$2,502	75%	N/A	$0.06	0.11	0.12
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,231	15	$2,081	75%	N/A	$0.05	0.52	0.55
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,779	15	$867	75%	N/A	$0.03	0.00	0.00
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,820	15	$1,450	75%	N/A	$0.04	0.00	0.00
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	5,953	15	$2,502	75%	N/A	$0.06	0.00	0.00
Washington	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	6,016	15	$2,081	75%	N/A	$0.05	0.02	0.02
Washington	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	234	10	$9,723	75%	94%	$6.01	0.79	0.79
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	11	12	$35	75%	35%	$0.41	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$12	75%	35%	$0.42	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	20	12	$61	75%	55%	$0.40	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	12	12	$38	75%	55%	$0.40	0.02	0.02
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	24	12	$13	20%	95%	$0.08	0.02	0.02
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$13	20%	94%	$0.08	0.02	0.02

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	938	25	$3,600	2.5%	100%	$0.38	0.10	0.10
Washington	Large Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	46	12	$114	80%	90%	$0.32	0.15	0.15
Washington	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	74	9	$28	95%	25%	$0.01	0.08	0.08
Washington	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.09	0.06	0.06
Washington	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	117	10	$392	75%	95%	$0.46	0.40	0.40
Washington	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	226	10	$9,723	75%	94%	$6.22	0.02	0.02
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	11	12	$35	75%	35%	$0.41	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$12	75%	35%	$0.42	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	20	12	$61	75%	55%	$0.40	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	12	12	$38	75%	55%	$0.40	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	23	12	$13	20%	95%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	21	12	$13	20%	94%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	906	25	$2,880	2.5%	100%	$0.31	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	72	9	$0.20	95%	25%	$-0.05	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.09	0.00	0.00
Washington	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	113	10	$392	75%	95%	$0.47	0.01	0.01
Washington	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	3,650	15	$5,114	75%	N/A	$0.19	36	37
Washington	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	5,691	15	$7,778	75%	N/A	$0.18	171	175
Washington	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	140	15	$325	100%	N/A	$0.27	0.00	0.00

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Washington	Large Retail	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	140	15	$325	100%	N/A	$0.27	0.00	0.00
Washington	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	3,525	15	$5,114	75%	N/A	$0.20	1	1
Washington	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	5,495	15	$7,778	75%	N/A	$0.19	7	7
Washington	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	135	15	$325	100%	N/A	$0.28	0.00	0.00
Washington	Large Retail	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	135	15	$325	100%	N/A	$0.28	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	502	10	$9,723	25%	94%	$2.81	4	4
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	11	12	$35	75%	35%	$0.41	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$12	75%	35%	$0.42	0.03	0.04
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	20	12	$61	75%	55%	$0.40	0.00	0.02
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	12	12	$38	75%	55%	$0.40	0.17	0.21
Washington	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	24	12	$13	0.0%	95%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	22	12	$13	0.0%	95%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,008	25	$3,600	2.5%	100%	$0.18	1	1
Washington	Large Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	100	12	$114	80%	90%	$0.15	2	2
Washington	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	159	9	$28	95%	25%	$-0.02	1	1
Washington	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.09	0.48	0.48
Washington	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	251	10	$392	75%	95%	$0.19	6	6
Washington	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	484	10	$9,723	25%	94%	$2.91	0.11	0.11

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	11	12	$35	75%	35%	$0.41	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$12	75%	35%	$0.42	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	20	12	$61	75%	55%	$0.40	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	12	12	$38	75%	55%	$0.40	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	23	12	$13	0.0%	95%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	21	12	$13	0.0%	95%	$0.08	0.00	0.00
Washington	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,938	25	$2,880	2.5%	100%	$0.15	0.01	0.01
Washington	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	154	9	$0.20	95%	25%	$-0.04	0.03	0.03
Washington	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.09	0.01	0.01
Washington	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	242	10	$392	75%	95%	$0.21	0.17	0.17
Washington	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	252	4	$28	100%	N/A	$0.03	7	7
Washington	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	252	4	$28	100%	N/A	$0.03	0.14	0.14
Washington	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	151	12	$25	90%	90%	$0.02	0.20	0.20
Washington	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	13	12	$35	55%	90%	$0.35	0.01	0.01
Washington	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	65	12	$15	95%	85%	$0.03	0.08	0.08
Washington	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	113	12	$64	19%	55%	$0.07	0.00	0.00
Washington	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	184	12	$118	55%	21%	$0.08	0.03	0.03
Washington	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	319	12	$179	11%	75%	$0.07	0.04	0.04
Washington	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	151	12	$25	90%	90%	$0.02	0.00	0.00
Washington	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	13	12	$35	55%	90%	$0.35	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	65	12	$15	95%	85%	$0.03	0.00	0.00
Washington	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	113	12	$64	19%	55%	$0.07	0.00	0.00
Washington	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	184	12	$118	55%	21%	$0.08	0.00	0.00
Washington	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	319	12	$179	11%	75%	$0.07	0.00	0.00
Washington	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	299	15	$2,000	50%	94%	$0.78	1	1
Washington	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	187	5	$1,362	95%	81%	$1.72	1	1
Washington	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	1,131	10	$6,291	25%	70%	$0.81	1	1
Washington	Lodging	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	748	15	$14,607	45%	30%	$2.27	0.73	0.73
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	3,140	20	$4,685	100%	N/A	$0.15	12	15
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,046	20	$1,561	100%	N/A	$0.15	0.00	0.00
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,334	20	$3,484	100%	N/A	$0.15	0.00	0.00
Washington	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,497	15	$2,800	45%	98%	$0.22	4	4
Washington	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	1,197	7	$777	10%	94%	$0.12	0.78	0.78
Washington	Lodging	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	2,095	15	$69	65%	35%	$0.00	3	3
Washington	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	598	13	$562	75%	65%	$0.12	1	1
Washington	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,497	15	$1,400	75%	76%	$0.03	5	5
Washington	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	673	12	$5,450	10%	75%	$0.33	0.31	0.31
Washington	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,497	40	$81,040	2.0%	**%	$4.79	0.00	0.00
Washington	Lodging	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	748	12	$426	10%	39%	$0.01	0.17	0.17
Washington	Lodging	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	34	25	$6,240	45%	65%	$0.11	0.06	0.06
Washington	Lodging	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$2,160	25%	85%	.	0.00	0.00
Washington	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	84%	.	0.00	0.00
Washington	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Washington	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00

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Washington	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	75%	.	0.00	0.00
Washington	Lodging	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WA State Code)	No Insulation	Per Building	Existing	224	15	$164	65%	45%	$0.09	0.40	0.40
Washington	Lodging	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,871	7	$1,577	90%	85%	$0.05	8	8
Washington	Lodging	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	2,851	10	$3,764	35%	66%	$0.19	3	3
Washington	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,888	25	$39	15%	90%	$0.00	1	1
Washington	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,722	25	$597	15%	69%	$0.01	0.91	0.91
Washington	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	168	15	$1,066	0.0%	94%	$0.74	0.00	0.00
Washington	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	105	5	$1,362	95%	81%	$3.07	0.02	0.02
Washington	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	636	10	$5,662	25%	70%	$1.29	0.02	0.02
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	2,133	20	$4,217	100%	N/A	$0.20	0.46	0.47
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	711	20	$1,405	100%	N/A	$0.20	0.00	0.00
Washington	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,586	20	$3,135	100%	N/A	$0.20	0.00	0.00
Washington	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	842	15	$2,800	45%	98%	$0.39	0.09	0.09
Washington	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	673	7	$700	10%	94%	$0.19	0.01	0.01
Washington	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	336	13	$506	75%	65%	$0.19	0.03	0.03
Washington	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	842	15	$1,400	75%	76%	$0.06	0.11	0.11
Washington	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	379	12	$5,450	10%	75%	$0.59	0.00	0.00
Washington	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	842	40	$81,040	2.0%	**%	$8.51	0.00	0.00
Washington	Lodging	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	842	15	$8,000	10%	75%	$0.34	0.01	0.01
Washington	Lodging	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,180	30	$1,180	20%	98%	$0.03	0.03	0.03
Washington	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,062	25	$39	80%	90%	$0.00	0.14	0.14
Washington	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	437	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,119	15	$726	100%	N/A	$0.08	5	7

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Washington	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	9,267	15	$-15204.351	10%	N/A	$-0.25	3	4
Washington	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	297	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	760	15	$580	100%	N/A	$0.09	0.17	0.18
Washington	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	6,298	15	$-11084.641	10%	N/A	$-0.27	0.10	0.10
Washington	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	348	15	$2,000	50%	94%	$0.67	6	6
Washington	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,743	15	$2,800	45%	98%	$0.19	28	28
Washington	Lodging	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	2,615	10	$4,536	10%	30%	$0.25	2	2
Washington	Lodging	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,743	5	$1,280	95%	72%	$0.17	41	41
Washington	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	4,358	15	$16,666	50%	94%	$0.45	66	66
Washington	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,743	15	$1,400	75%	76%	$0.03	28	28
Washington	Lodging	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	435	18	$1,920	45%	65%	$0.16	3	3
Washington	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	784	12	$5,450	10%	75%	$0.32	1	1
Washington	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,743	40	$81,040	2.0%	**%	$4.11	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	3,919	15	$3,101	60%	97%	$0.09	60	60
Washington	Lodging	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	871	12	$426	10%	39%	$0.01	0.78	0.78
Washington	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	39	25	$6,240	45%	65%	$0.11	0.26	0.26
Washington	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$2,160	25%	85%	.	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	732	20	$1,547	45%	60%	$0.07	4	4
Washington	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	84%	.	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	75%	.	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,179	7	$1,577	90%	85%	$0.05	38	38

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Washington	Lodging	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	2,851	10	$3,764	35%	66%	$0.19	13	13
Washington	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,199	25	$39	15%	90%	$0.00	5	5
Washington	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,006	25	$597	15%	69%	$0.01	4	4
Washington	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	217	15	$1,066	0.0%	94%	$0.57	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,087	15	$2,800	45%	98%	$0.30	0.62	0.62
Washington	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,718	15	$16,666	50%	94%	$0.71	1	1
Washington	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,087	15	$1,400	75%	76%	$0.05	0.69	0.69
Washington	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	489	12	$5,450	10%	75%	$0.54	0.03	0.03
Washington	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,087	40	$81,040	2.0%	**%	$6.59	0.00	0.00
Washington	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,444	15	$3,101	60%	97%	$0.15	1	1
Washington	Lodging	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,087	15	$8,000	10%	75%	$0.31	0.07	0.07
Washington	Lodging	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,523	30	$1,523	20%	98%	$0.03	0.19	0.19
Washington	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,371	25	$39	80%	90%	$0.00	0.77	0.77
Washington	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,809	15	$2,800	45%	98%	$0.18	30	30
Washington	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,809	15	$1,400	75%	76%	$0.03	37	37
Washington	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	814	12	$5,450	10%	75%	$0.31	2	2
Washington	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,809	40	$81,040	2.0%	**%	$3.96	0.00	0.00
Washington	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	4,069	15	$3,101	60%	97%	$0.09	80	80
Washington	Lodging	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	904	12	$426	10%	39%	$0.01	1	1
Washington	Lodging	Cooling Room	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	41	25	$6,240	45%	65%	$0.11	0.35	0.35
Washington	Lodging	Cooling Room	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$2,160	25%	85%	.	0.00	0.00
Washington	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$7,520	15%	84%	.	0.00	0.00
Washington	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$2,320	15%	90%	.	0.00	0.00
Washington	Lodging	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Cooling Room	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	75%	.	0.00	0.00
Washington	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,591	9	$1,056	50%	N/A	$0.10	19	23
Washington	Lodging	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	2,851	10	$3,764	35%	66%	$0.19	19	19
Washington	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,283	25	$39	15%	90%	$0.00	8	8
Washington	Lodging	Cooling Room	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,082	25	$597	15%	69%	$0.01	5	5
Washington	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,180	15	$2,800	45%	98%	$0.28	0.65	0.65
Washington	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,180	15	$1,400	75%	76%	$0.05	0.83	0.83
Washington	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	531	12	$5,450	10%	75%	$0.52	0.04	0.04
Washington	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,180	40	$81,040	2.0%	**%	$6.07	0.00	0.00
Washington	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	2,653	15	$3,101	60%	97%	$0.14	1	1
Washington	Lodging	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,180	15	$8,000	10%	75%	$0.30	0.08	0.08
Washington	Lodging	Cooling Room	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,654	30	$1,654	20%	98%	$0.04	0.24	0.24
Washington	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	1,040	9	$844	50%	N/A	$0.13	0.40	0.41
Washington	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,489	25	$39	80%	90%	$0.00	0.92	0.92
Washington	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	12	6	$0.27	100%	N/A	$0.00	2	2
Washington	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	12	6	$0.27	100%	N/A	$0.00	0.07	0.07
Washington	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	34	4	$38	100%	N/A	$0.32	0.31	0.31
Washington	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	34	4	$38	100%	N/A	$0.32	0.07	0.07
Washington	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	47	20	$1	100%	N/A	$0.00	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	31	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	48	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	63	20	$8	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	73	20	$14	100%	N/A	$0.02	1	2
Washington	Lodging	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	201	20	$47	8.8%	100%	$0.02	2	2
Washington	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	47	20	$1	100%	N/A	$0.00	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	31	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	48	20	$2	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	63	20	$8	100%	N/A	$0.01	0.00	0.00
Washington	Lodging	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	73	20	$14	100%	N/A	$0.02	0.14	0.16
Washington	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,531	15	$2,702	100%	N/A	$0.21	0.00	0.00
Washington	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,883	15	$5,405	100%	N/A	$0.13	50	65
Washington	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	374	15	$2,000	50%	94%	$0.62	3	3
Washington	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,872	15	$2,800	45%	98%	$0.17	17	17
Washington	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,702	15	$1,400	75%	76%	$0.03	54	54
Washington	Lodging	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,175	18	$1,920	45%	65%	$0.17	6	6
Washington	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,245	14	$13,760	5.0%	94%	$0.39	3	3
Washington	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,116	12	$5,450	10%	75%	$0.34	3	3
Washington	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,872	40	$81,040	2.0%	**%	$3.83	0.00	0.00
Washington	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	10,217	30	$60,233	5.0%	N/A	$1.44	3	5
Washington	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	10,574	15	$3,101	60%	97%	$0.03	116	116
Washington	Lodging	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,527	12	$426	10%	39%	$0.02	2	2
Washington	Lodging	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,651	25	$6,240	45%	65%	$0.13	22	22
Washington	Lodging	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	712	25	$2,160	25%	85%	$0.30	2	2
Washington	Lodging	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	1,975	20	$1,547	45%	60%	$0.08	8	8
Washington	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	10,429	25	$7,520	15%	84%	$0.07	20	20
Washington	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	1,468	25	$2,320	15%	90%	$0.16	3	3
Washington	Lodging	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	75%	.	0.00	0.00
Washington	Lodging	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,878	7	$1,577	90%	85%	$0.05	69	69
Washington	Lodging	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	2,851	10	$3,764	35%	66%	$0.19	9	9
Washington	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	5,933	25	$39	15%	90%	$0.00	10	10
Washington	Lodging	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,412	25	$597	15%	69%	$0.01	7	7
Washington	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	947	15	$2,162	100%	N/A	$0.27	0.00	0.00
Washington	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	2,931	15	$4,324	100%	N/A	$0.17	1	1
Washington	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	210	15	$1,066	0.0%	94%	$0.59	0.00	0.00
Washington	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,052	15	$2,800	45%	98%	$0.31	0.33	0.33
Washington	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,642	15	$1,400	75%	76%	$0.06	1	1
Washington	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,385	14	$13,760	5.0%	94%	$0.70	0.07	0.07
Washington	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,188	12	$5,450	10%	75%	$0.61	0.06	0.06
Washington	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,052	40	$81,040	2.0%	**%	$6.81	0.00	0.00
Washington	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	6,372	30	$82,308	5.0%	N/A	$1.17	0.13	0.13
Washington	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	5,940	15	$3,101	60%	97%	$0.06	2	2
Washington	Lodging	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	400	25	$2,160	75%	85%	$0.53	0.11	0.11
Washington	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	824	25	$2,320	35%	90%	$0.28	0.11	0.11
Washington	Lodging	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,642	15	$8,000	10%	75%	$0.35	0.11	0.11
Washington	Lodging	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	3,703	30	$3,703	20%	98%	$0.09	0.30	0.30
Washington	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	3,333	25	$39	80%	90%	$0.00	1	1
Washington	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	749	8	$208	5.0%	95%	$0.05	6	6
Washington	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,144	8	$608	75%	70%	$0.09	116	116
Washington	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	950	15	$1,284	62%	90%	$0.16	103	103
Washington	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	831	8	$1,463	90%	58%	$0.30	65	65

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Washington	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	70	13	$105	75%	95%	$0.19	9	9
Washington	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	7,288	17	$4,952	5.0%	95%	$0.07	67	67
Washington	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	749	8	$208	5.0%	95%	$0.05	0.23	0.23
Washington	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,144	8	$608	75%	70%	$0.09	4	4
Washington	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	950	15	$1,284	62%	90%	$0.16	3	3
Washington	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	831	8	$1,463	90%	58%	$0.30	2	2
Washington	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	70	13	$105	75%	95%	$0.19	0.32	0.32
Washington	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	7,288	17	$4,952	5.0%	95%	$0.07	2	2
Washington	Lodging	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	185	10	$666	25%	95%	$0.52	7	7
Washington	Lodging	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,036	8	$7,155	5.0%	92%	$1.17	7	7
Washington	Lodging	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	777	8	$5,366	5.0%	92%	$1.17	5	5
Washington	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	428	13	$671	100%	N/A	$0.20	45	45
Washington	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	356	13	$-68.769011	100%	N/A	$-0.05	0.00	0.00
Washington	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	933	13	$7,870	25%	N/A	$1.09	29	30
Washington	Lodging	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,460	8	$1,463	5.0%	58%	$0.17	6	6
Washington	Lodging	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	695	8	$58	10%	100%	$0.01	10	10
Washington	Lodging	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	58	15	$39	100%	N/A	$0.44	0.00	0.00
Washington	Lodging	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	72	15	$171	95%	N/A	$-0.29	4	4
Washington	Lodging	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	64	29	$1,259	50%	N/A	$0.40	0.15	0.16
Washington	Lodging	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	41	20	$-1.7063436	25%	N/A	$-0.81	0.00	0.00
Washington	Lodging	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	20	15	$797	100%	N/A	$-0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	46	8	$1,463	5.0%	58%	$5.31	0.24	0.24
Washington	Lodging	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	22	8	$58	10%	95%	$0.45	0.38	0.38
Washington	Lodging	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	178	11	$69	95%	50%	$0.05	16	16
Washington	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	35	13	$30	95%	98%	$0.11	6	6
Washington	Lodging	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	408	10	$666	25%	95%	$0.24	0.52	0.52
Washington	Lodging	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	777	8	$7,155	5.0%	92%	$1.55	0.19	0.19
Washington	Lodging	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	582	8	$5,366	5.0%	92%	$1.55	0.14	0.14
Washington	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	35	13	$30	95%	98%	$0.11	0.18	0.18
Washington	Lodging	Lighting Interior Other	Lighting Package, High Efficiency	19% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,877	13	$6,909	100%	N/A	$0.22	25	25
Washington	Lodging	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	2,860	30	$2,860	20%	98%	$0.09	2	2
Washington	Lodging	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,214	8	$1,463	5.0%	58%	$0.08	0.48	0.48
Washington	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	44,854	4	$790	85%	N/A	$0.00	0.00	280
Washington	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	39,236	1	$523	100%	N/A	$0.00	0.00	0.00
Washington	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	10,373	1	$409	100%	N/A	$-0.00	0.00	0.00
Washington	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	45,227	12	$9,808	15%	N/A	$0.03	76	449
Washington	Lodging	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	4,248	8	$1,463	5.0%	58%	$0.06	9	9
Washington	Lodging	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	2,023	8	$58	10%	95%	$0.00	15	15
Washington	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	5	7	$1	10%	90%	$0.05	0.09	0.09
Washington	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	19	4	$0.00	25%	45%	$0.00	0.42	0.42
Washington	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	10	10	$0.05	95%	75%	$0.00	1	1
Washington	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	117	117

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Washington	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	19	4	$1	5.0%	86%	$0.02	0.16	0.16
Washington	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	200	4	$40	60%	90%	$0.06	20	20
Washington	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	5	7	$1	10%	90%	$0.05	0.00	0.00
Washington	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	19	4	$0.00	25%	45%	$0.00	0.01	0.01
Washington	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	10	10	$0.05	95%	75%	$0.00	0.04	0.04
Washington	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	4	4
Washington	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	19	4	$1	5.0%	86%	$0.02	0.00	0.00
Washington	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	200	4	$40	60%	90%	$0.06	0.72	0.72
Washington	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	39	6	$42	100%	N/A	$0.23	0.22	0.22
Washington	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	39	6	$42	100%	N/A	$0.23	0.01	0.01
Washington	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	103	6	$12	100%	N/A	$0.02	1	1
Washington	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	103	6	$12	100%	N/A	$0.02	0.00	0.00
Washington	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	452	10	$375	5.0%	80%	$0.12	0.38	0.38
Washington	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	614	10	$509	5.0%	80%	$0.12	0.52	0.52
Washington	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	12	10	$2	1.0%	85%	$0.03	0.00	0.00
Washington	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	19	15	$18	0.0%	95%	$0.10	0.00	0.00
Washington	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	452	10	$375	5.0%	80%	$0.12	0.01	0.01
Washington	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	614	10	$509	5.0%	80%	$0.12	0.01	0.01
Washington	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	12	10	$2	1.0%	85%	$0.03	0.00	0.00
Washington	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	19	15	$18	0.0%	95%	$0.10	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	163	20	$57	100%	N/A	$0.04	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	290	20	$124	100%	N/A	$0.04	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	415	20	$1,592	100%	N/A	$0.39	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	511	20	$2,135	100%	N/A	$0.42	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	580	20	$318	100%	N/A	$0.06	20	23
Washington	Lodging	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	2,441	20	$435	8.8%	100%	$0.02	35	35

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Washington	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	163	20	$57	100%	N/A	$0.04	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	290	20	$124	100%	N/A	$0.04	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	415	20	$1,592	100%	N/A	$0.39	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	511	20	$2,135	100%	N/A	$0.42	0.00	0.00
Washington	Lodging	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	580	20	$318	100%	N/A	$0.06	1	1
Washington	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,976	15	$1,400	75%	76%	$0.03	195	195
Washington	Lodging	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,244	18	$1,920	45%	65%	$0.14	23	23
Washington	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	7,464	14	$13,760	5.0%	94%	$0.22	22	22
Washington	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,239	12	$5,450	10%	75%	$0.27	10	10
Washington	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	11,188	15	$3,101	60%	97%	$0.03	415	415
Washington	Lodging	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	4,976	12	$426	10%	39%	$0.01	10	10
Washington	Lodging	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	8,151	25	$6,240	45%	65%	$0.08	132	132
Washington	Lodging	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	1,146	25	$2,160	25%	85%	$0.19	12	12
Washington	Lodging	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	2,089	20	$1,547	45%	60%	$0.06	29	29
Washington	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	17,387	25	$7,520	15%	84%	$0.04	113	113
Washington	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	2,227	25	$2,320	15%	90%	$0.10	14	14
Washington	Lodging	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,932	10%	85%	.	0.00	0.00
Washington	Lodging	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,487	10%	75%	.	0.00	0.00
Washington	Lodging	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,220	7	$1,577	90%	85%	$0.04	236	236
Washington	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	6,278	25	$39	15%	90%	$0.00	37	37
Washington	Lodging	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,726	25	$597	15%	69%	$0.01	25	25
Washington	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,832	15	$1,400	75%	76%	$0.05	3	3
Washington	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,248	14	$13,760	5.0%	94%	$0.39	0.44	0.44
Washington	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,274	12	$5,450	10%	75%	$0.46	0.21	0.21
Washington	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	6,367	15	$3,101	60%	97%	$0.06	8	8
Washington	Lodging	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	652	25	$2,160	75%	85%	$0.33	0.59	0.59
Washington	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	1,267	25	$2,320	35%	90%	$0.18	0.55	0.55

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Washington	Lodging	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,832	15	$8,000	10%	75%	$0.27	0.38	0.38
Washington	Lodging	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	3,969	30	$3,969	20%	98%	$0.08	1	1
Washington	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	3,573	25	$39	80%	90%	$0.00	4	4
Washington	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	276	10	$37	100%	N/A	$0.02	25	25
Washington	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	276	10	$37	100%	N/A	$0.02	0.96	0.96
Washington	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	4,016	10	$980	5.0%	90%	$0.04	35	35
Washington	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$5,250	95%	45%	$0.50	92	92
Washington	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	204	15	$52	95%	76%	$0.03	27	27
Washington	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	5,120	20	$890	55%	45%	$0.02	236	236
Washington	Lodging	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	141	7	$40	65%	25%	$0.05	0.00	0.00
Washington	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	3,952	10	$980	5.0%	90%	$0.04	1	1
Washington	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$5,250	95%	45%	$0.50	3	3
Washington	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	201	15	$52	95%	76%	$0.03	0.94	0.94
Washington	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	5,038	20	$890	55%	45%	$0.02	5	5
Washington	Lodging	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	2,769	30	$2,769	20%	98%	$0.09	2	2
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,973	15	$1,204	75%	N/A	$0.03	0.00	0.00
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,030	15	$2,015	75%	N/A	$0.04	0.00	0.00
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,213	15	$3,475	75%	N/A	$0.06	0.00	0.11
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,300	15	$2,890	75%	N/A	$0.05	0.03	0.48
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,973	15	$1,204	75%	N/A	$0.03	0.00	0.00

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Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,030	15	$2,015	75%	N/A	$0.04	0.00	0.00
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,213	15	$3,475	75%	N/A	$0.06	0.00	0.00
Washington	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,300	15	$2,890	75%	N/A	$0.05	0.01	0.01
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$-0.23	1	1
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	69	14	$38	5.0%	94%	$-0.49	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	104	14	$111	5.0%	97%	$-0.24	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	130	14	$227	5.0%	99%	$-0.09	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	37	14	$112	5.0%	99%	$-0.64	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	25	14	$81	5.0%	99%	$-1.11	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	312	10	$2,222	55%	80%	$1.03	0.65	0.65
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	10%	35%	$0.41	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	10%	35%	$0.42	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	10%	55%	$0.40	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	10%	55%	$0.40	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	266	12	$151	60%	95%	$0.07	0.74	0.75

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	244	12	$151	60%	94%	$0.07	0.67	0.68
Washington	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,250	25	$5,000	2.5%	100%	$0.40	0.13	0.13
Washington	Lodging	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	62	12	$159	80%	90%	$0.34	0.19	0.19
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	99	9	$224	95%	25%	$0.32	0.11	0.11
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.05	2	2
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	2,145	10	$58	95%	85%	$-0.00	8	8
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	5,483	10	$593	95%	62%	$0.01	15	15
Washington	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	156	10	$3,140	75%	95%	$2.88	0.54	0.54
Washington	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	712	10	$375	5.0%	94%	$0.08	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$-0.23	0.03	0.03
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	69	14	$38	5.0%	94%	$-0.49	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	104	14	$111	5.0%	97%	$-0.24	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	130	14	$227	5.0%	99%	$-0.09	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	37	14	$112	5.0%	99%	$-0.64	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	25	14	$81	5.0%	99%	$-1.11	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	312	10	$2,222	55%	80%	$1.03	0.02	0.02
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	8	12	$25	10%	35%	$0.41	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	10%	35%	$0.42	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	10%	55%	$0.40	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	9	12	$27	10%	55%	$0.40	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	256	12	$145	60%	95%	$0.07	0.02	0.02
Washington	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	234	12	$145	60%	94%	$0.07	0.02	0.02
Washington	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,250	25	$4,000	2.5%	100%	$0.32	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	99	9	$1	95%	25%	$-0.03	0.00	0.00
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.05	0.09	0.09
Washington	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	2,145	10	$58	95%	85%	$-0.00	0.29	0.29
Washington	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	156	10	$3,140	75%	95%	$2.88	0.01	0.01
Washington	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	712	10	$375	5.0%	94%	$0.08	0.00	0.00
Washington	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	4,863	15	$7,104	75%	N/A	$0.20	31	43
Washington	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	7,581	15	$10,803	75%	N/A	$0.19	150	204
Washington	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	186	15	$451	100%	N/A	$0.28	0.00	0.00
Washington	Lodging	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	186	15	$451	100%	N/A	$0.28	0.00	0.00
Washington	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	4,863	15	$7,104	75%	N/A	$0.20	1	1
Washington	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	7,581	15	$10,803	75%	N/A	$0.19	8	8
Washington	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	186	15	$451	100%	N/A	$0.28	0.00	0.00
Washington	Lodging	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	186	15	$451	100%	N/A	$0.28	0.00	0.00

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Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$-0.23	7	9
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	69	14	$38	5.0%	94%	$-0.49	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	104	14	$111	5.0%	97%	$-0.24	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	130	14	$227	5.0%	99%	$-0.09	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	37	14	$112	5.0%	99%	$-0.64	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	25	14	$81	5.0%	99%	$-1.11	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	668	10	$2,222	25%	94%	$0.48	5	5
Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	75%	35%	$0.41	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	35%	$0.42	0.02	0.03
Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	75%	55%	$0.40	0.00	0.01
Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	75%	55%	$0.40	0.13	0.15
Washington	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	266	12	$151	50%	95%	$0.07	4	5
Washington	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	244	12	$151	50%	95%	$0.07	4	5
Washington	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,674	25	$5,000	2.5%	100%	$0.19	2	2
Washington	Lodging	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	133	12	$159	80%	90%	$0.16	3	3

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Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	212	9	$224	95%	25%	$0.13	1	1
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.05	20	20
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	2,145	10	$58	95%	85%	$-0.00	63	63
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	5,483	10	$593	95%	62%	$0.01	117	117
Washington	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	334	10	$3,140	75%	95%	$1.33	8	8
Washington	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,524	10	$375	2.5%	94%	$0.04	0.66	0.66
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$-0.23	0.21	0.21
Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	69	14	$38	5.0%	94%	$-0.49	0.00	0.00
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Washington	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	25	14	$81	5.0%	99%	$-1.11	0.00	0.00
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Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	35%	$0.42	0.00	0.00
Washington	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	75%	55%	$0.40	0.00	0.00

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Washington	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	256	12	$145	50%	95%	$0.07	0.12	0.12
Washington	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	234	12	$145	50%	95%	$0.07	0.11	0.11
Washington	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,674	25	$4,000	2.5%	100%	$0.15	0.02	0.02
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	212	9	$1	95%	25%	$-0.03	0.05	0.05
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.05	0.57	0.57
Washington	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	2,145	10	$58	95%	85%	$-0.00	1	1
Washington	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	334	10	$3,140	75%	95%	$1.33	0.24	0.24
Washington	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,524	10	$375	2.5%	94%	$0.04	0.02	0.02
Washington	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	279	4	$31	100%	N/A	$0.03	271	316
Washington	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	431	4	$31	95%	30%	$0.02	736	736
Washington	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	279	4	$31	100%	N/A	$0.03	4	4
Washington	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	431	4	$31	95%	30%	$0.02	26	26
Washington	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	789	15	$1,125	25%	94%	$0.17	16	16
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,656	20	$2,928	100%	N/A	$0.18	81	95
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	552	20	$976	100%	N/A	$0.18	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,231	20	$2,177	100%	N/A	$0.18	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,369	15	$13,680	5.0%	65%	$0.33	6	6
Washington	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	789	15	$1,575	45%	95%	$0.23	28	28
Washington	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	789	15	$787	75%	76%	$0.06	36	36
Washington	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	355	12	$5,450	1.0%	75%	$0.99	0.20	0.20

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	789	40	$45,585	2.0%	**%	$5.10	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	394	12	$59	5.0%	39%	$0.01	0.58	0.58
Washington	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	18	25	$3,510	45%	69%	$0.25	0.42	0.42
Washington	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$1,215	25%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,230	15%	84%	.	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$1,305	15%	90%	.	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,087	10%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$10,399	10%	74%	.	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	987	7	$887	90%	85%	$0.08	58	58
Washington	Miscellaneous	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	370	10	$527	35%	68%	$0.21	6	6
Washington	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	996	25	$5	15%	90%	$0.00	9	9
Washington	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	908	25	$83	15%	72%	$0.00	6	6
Washington	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	454	15	$600	25%	94%	$0.15	0.32	0.32
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,151	20	$2,635	100%	N/A	$0.23	2	3
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	383	20	$878	100%	N/A	$0.23	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	856	20	$1,959	100%	N/A	$0.23	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	454	15	$1,575	45%	95%	$0.40	0.55	0.55
Washington	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	454	15	$787	75%	76%	$0.10	0.73	0.73
Washington	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	204	12	$5,450	1.0%	75%	$1.82	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	454	40	$45,585	2.0%	**%	$8.87	0.00	0.00
Washington	Miscellaneous	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	454	15	$4,500	10%	75%	$0.60	0.08	0.08
Washington	Miscellaneous	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	684	30	$684	29%	98%	$0.05	0.37	0.37
Washington	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	573	25	$5	80%	90%	$0.00	0.91	0.91
Washington	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	265	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	678	15	$453	100%	N/A	$0.08	315	436

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Washington	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,614	15	$-9502.7193	5.0%	N/A	$-0.26	39	55
Washington	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	183	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	468	15	$363	100%	N/A	$0.09	10	11
Washington	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,876	15	$-6927.9008	5.0%	N/A	$-0.28	1	1
Washington	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,083	15	$1,125	50%	94%	$0.12	736	736
Washington	Miscellaneous	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,251	15	$13,680	15%	67%	$0.28	451	451
Washington	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,083	15	$1,575	45%	98%	$0.17	638	638
Washington	Miscellaneous	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,625	10	$2,835	10%	70%	$0.25	145	145
Washington	Miscellaneous	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,083	5	$800	95%	72%	$0.17	940	940
Washington	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,709	15	$9,375	50%	94%	$0.40	1,499	1,499
Washington	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,083	15	$787	75%	76%	$0.05	639	639
Washington	Miscellaneous	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	270	18	$1,080	45%	65%	$0.24	77	77
Washington	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	487	12	$5,450	1.0%	75%	$0.84	3	3
Washington	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,083	40	$45,585	2.0%	**%	$3.72	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	541	12	$59	10%	39%	$0.01	20	20
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	24	25	$3,510	45%	69%	$0.25	7	7
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$1,215	25%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	455	20	$870	45%	59%	$0.11	116	116
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,230	15%	84%	.	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$1,305	15%	90%	.	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,087	10%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$10,399	10%	74%	.	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,354	7	$887	90%	85%	$0.07	996	996
Washington	Miscellaneous	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	370	10	$527	35%	66%	$0.21	74	74

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Washington	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,367	25	$5	15%	90%	$0.00	158	158
Washington	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,247	25	$83	15%	72%	$0.00	113	113
Washington	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	685	15	$600	0.0%	94%	$0.10	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	685	15	$1,575	45%	98%	$0.27	15	15
Washington	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,713	15	$9,375	50%	94%	$0.64	39	39
Washington	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	685	15	$787	75%	76%	$0.08	17	17
Washington	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	308	12	$5,450	1.0%	75%	$1.44	0.09	0.09
Washington	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	685	40	$45,585	2.0%	**%	$5.88	0.00	0.00
Washington	Miscellaneous	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	685	15	$4,500	10%	75%	$0.47	2	2
Washington	Miscellaneous	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,031	30	$1,031	29%	98%	$0.06	8	8
Washington	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	864	25	$5	80%	90%	$0.00	21	21
Washington	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,097	15	$1,575	45%	98%	$0.17	80	80
Washington	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,097	15	$787	75%	76%	$0.05	98	98
Washington	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	493	12	$5,450	1.0%	75%	$0.83	0.55	0.55
Washington	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,097	40	$45,585	2.0%	**%	$3.67	0.00	0.00
Washington	Miscellaneous	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	548	12	$59	10%	39%	$0.01	3	3
Washington	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	25	25	$3,510	45%	69%	$0.25	1	1
Washington	Miscellaneous	Cooling Room	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$1,215	25%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,230	15%	84%	.	0.00	0.00
Washington	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$1,305	15%	90%	.	0.00	0.00
Washington	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,087	10%	85%	.	0.00	0.00
Washington	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$10,399	10%	74%	.	0.00	0.00
Washington	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	964	9	$366	5.0%	N/A	$0.06	2	2
Washington	Miscellaneous	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	370	10	$527	35%	66%	$0.21	12	12
Washington	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,384	25	$5	15%	90%	$0.00	27	27

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Washington	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,262	25	$83	15%	72%	$0.00	19	19
Washington	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	724	15	$1,575	45%	98%	$0.25	1	1
Washington	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	724	15	$787	75%	76%	$0.08	2	2
Washington	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	326	12	$5,450	1.0%	75%	$1.39	0.01	0.01
Washington	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	724	40	$45,585	2.0%	**%	$5.56	0.00	0.00
Washington	Miscellaneous	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	724	15	$4,500	10%	75%	$0.46	0.27	0.27
Washington	Miscellaneous	Cooling Room	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,091	30	$1,091	29%	98%	$0.06	1	1
Washington	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	639	9	$293	5.0%	N/A	$0.07	0.00	0.00
Washington	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	914	25	$5	80%	90%	$0.00	2	2
Washington	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	37	6	$0.80	100%	N/A	$0.00	228	228
Washington	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	37	6	$0.80	100%	N/A	$0.00	7	7
Washington	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	37	4	$42	100%	N/A	$0.32	13	13
Washington	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	37	4	$42	100%	N/A	$0.32	3	3
Washington	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.16	100%	N/A	$0.00	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.33	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.33	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	9	20	$1	100%	N/A	$0.02	9	10
Washington	Miscellaneous	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	26	20	$6	8.8%	100%	$0.02	13	13
Washington	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.16	100%	N/A	$0.00	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.33	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.33	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	Miscellaneous	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	9	20	$1	100%	N/A	$0.02	0.72	0.78

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	764	15	$1,689	100%	N/A	$0.26	0.00	0.00
Washington	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,238	15	$3,378	100%	N/A	$0.18	356	435
Washington	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,171	15	$1,125	50%	94%	$0.11	152	152
Washington	Miscellaneous	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	6,794	15	$13,680	15%	67%	$0.23	185	185
Washington	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,171	15	$1,575	45%	98%	$0.16	135	135
Washington	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,264	15	$787	75%	76%	$0.04	330	330
Washington	Miscellaneous	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	566	18	$1,080	45%	65%	$0.20	40	40
Washington	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,639	14	$7,740	5.0%	94%	$0.57	18	18
Washington	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,019	12	$5,450	1.0%	75%	$0.71	1	1
Washington	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,171	40	$45,585	2.0%	**%	$3.44	0.00	0.00
Washington	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,214	30	$145	5.0%	N/A	$1.76	27	37
Washington	Miscellaneous	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,698	12	$59	10%	39%	$0.00	15	15
Washington	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,806	25	$3,510	45%	69%	$0.19	133	133
Washington	Miscellaneous	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	275	25	$1,215	25%	85%	$0.44	13	13
Washington	Miscellaneous	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	951	20	$870	45%	59%	$0.09	58	58
Washington	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,742	25	$4,230	15%	84%	$0.11	108	108
Washington	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	532	25	$1,305	15%	90%	$0.24	16	16
Washington	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,087	10%	85%	.	0.00	0.00
Washington	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$10,399	10%	74%	.	0.00	0.00
Washington	Miscellaneous	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,830	7	$887	90%	85%	$0.06	486	486
Washington	Miscellaneous	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	370	10	$527	35%	66%	$0.21	17	17
Washington	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,857	25	$5	15%	90%	$0.00	77	77
Washington	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,606	25	$83	15%	72%	$0.00	55	55

Table C-2.2. Commercial Measure Details

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Washington	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	467	15	$1,351	100%	N/A	$0.34	0.00	0.00
Washington	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,275	15	$2,702	100%	N/A	$0.25	9	10
Washington	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	639	15	$600	0.0%	94%	$0.11	0.00	0.00
Washington	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	639	15	$1,575	45%	98%	$0.29	2	2
Washington	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,235	15	$787	75%	76%	$0.07	6	6
Washington	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	893	14	$7,740	5.0%	94%	$1.05	0.37	0.37
Washington	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	555	12	$5,450	1.0%	75%	$1.30	0.03	0.03
Washington	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	639	40	$45,585	2.0%	**%	$6.31	0.00	0.00
Washington	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,242	30	$51,443	5.0%	N/A	$1.44	1	1
Washington	Miscellaneous	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	150	25	$1,215	75%	85%	$0.80	0.63	0.63
Washington	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	290	25	$1,305	35%	90%	$0.44	0.60	0.60
Washington	Miscellaneous	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,235	15	$4,500	10%	75%	$0.42	0.80	0.80
Washington	Miscellaneous	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,858	30	$1,858	29%	98%	$0.09	3	3
Washington	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,558	25	$5	80%	90%	$0.00	8	8
Washington	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	421	8	$117	5.0%	95%	$0.05	143	143
Washington	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,199	8	$456	75%	70%	$0.06	4,499	4,499
Washington	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	996	15	$1,346	62%	90%	$0.16	3,972	3,972
Washington	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	503	8	$823	90%	52%	$0.28	1,321	1,321
Washington	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	47	13	$71	75%	95%	$0.19	243	243
Washington	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	4,099	17	$2,785	5.0%	95%	$0.07	1,391	1,391
Washington	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	421	8	$117	5.0%	95%	$0.05	4	4
Washington	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,199	8	$456	75%	70%	$0.06	155	155
Washington	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	996	15	$1,346	62%	90%	$0.16	137	137

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Washington	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	503	8	$823	90%	52%	$0.28	45	45
Washington	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	47	13	$71	75%	95%	$0.19	8	8
Washington	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	4,099	17	$2,785	5.0%	95%	$0.07	43	43
Washington	Miscellaneous	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	242	10	$374	5.0%	95%	$0.22	67	67
Washington	Miscellaneous	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,805	8	$4,500	20%	84%	$0.42	1,786	1,786
Washington	Miscellaneous	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,353	8	$3,375	20%	84%	$0.42	653	653
Washington	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	146	6	$54	10%	80%	$0.05	69	69
Washington	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	89	6	$45	5.0%	80%	$0.09	21	21
Washington	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	746	13	$1,001	100%	N/A	$0.17	2,974	3,111
Washington	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	578	13	$307	100%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,424	13	$9,775	25%	N/A	$0.89	1,891	1,978
Washington	Miscellaneous	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,102	8	$823	75%	52%	$0.13	2,452	2,452
Washington	Miscellaneous	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	908	8	$69	10%	100%	$0.01	498	498
Washington	Miscellaneous	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	794	15	$362	100%	N/A	$0.09	0.00	0.00
Washington	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	975	15	$1,573	95%	N/A	$0.12	2,341	2,399
Washington	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	869	20	$11,545	50%	N/A	$1.18	63	66
Washington	Miscellaneous	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	555	13	$-13.110427	25%	N/A	$-0.10	0.00	0.00
Washington	Miscellaneous	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	278	15	$7,309	100%	N/A	$2.53	0.00	0.00
Washington	Miscellaneous	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	365	8	$823	75%	52%	$0.38	964	964
Washington	Miscellaneous	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	301	8	$69	10%	95%	$0.04	186	186

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Washington	Miscellaneous	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	312	11	$121	95%	50%	$0.05	1,062	1,062
Washington	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	62	13	$53	95%	98%	$0.11	416	416
Washington	Miscellaneous	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	307	10	$374	5.0%	95%	$0.18	3	3
Washington	Miscellaneous	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,437	8	$4,500	20%	84%	$0.53	54	54
Washington	Miscellaneous	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,078	8	$3,375	20%	84%	$0.53	0.00	0.00
Washington	Miscellaneous	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	113	6	$27	10%	80%	$0.01	2	2
Washington	Miscellaneous	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	51	6	$19	10%	80%	$0.06	0.92	0.92
Washington	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	62	13	$53	95%	98%	$0.11	13	13
Washington	Miscellaneous	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,384	13	$4,122	100%	N/A	$0.38	309	312
Washington	Miscellaneous	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	2,315	30	$2,315	29%	98%	$0.09	106	106
Washington	Miscellaneous	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,400	8	$823	75%	52%	$0.10	115	115
Washington	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,779	4	$69	85%	N/A	$-0.01	0.00	837
Washington	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,054	1	$45	100%	N/A	$0.00	0.00	0.00
Washington	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,323	1	$35	100%	N/A	$-0.01	0.00	0.00
Washington	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,827	12	$858	15%	N/A	$0.01	323	1,845
Washington	Miscellaneous	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	291	8	$823	75%	52%	$0.48	361	361
Washington	Miscellaneous	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	239	8	$69	10%	95%	$0.05	69	69
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.56	10%	90%	$0.05	1	1
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	57	4	$0.00	10%	45%	$0.00	18	18
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	104	104

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Washington	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	7	4	$0.67	5.0%	86%	$0.03	2	2
Washington	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	90	4	$18	60%	90%	$0.06	347	347
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.56	10%	90%	$0.05	0.04	0.04
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	57	4	$0.00	10%	45%	$0.00	0.63	0.63
Washington	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	3	3
Washington	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	7	4	$0.67	5.0%	86%	$0.03	0.07	0.07
Washington	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	90	4	$18	60%	90%	$0.06	12	12
Washington	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	115	6	$126	100%	N/A	$0.23	24	24
Washington	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	115	6	$126	100%	N/A	$0.23	1	1
Washington	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	79	6	$9	100%	N/A	$0.02	50	50
Washington	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	79	6	$9	100%	N/A	$0.02	0.00	0.00
Washington	Miscellaneous	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	287	15	$43	2.5%	90%	$0.02	6	6
Washington	Miscellaneous	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	93	15	$28	2.5%	90%	$0.04	2	2
Washington	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	192	10	$159	1.0%	80%	$0.12	1	1
Washington	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	261	10	$216	1.0%	80%	$0.12	2	2
Washington	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	28	8	$2	2.5%	95%	$0.02	0.64	0.64
Washington	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	70	5	$11	5.0%	85%	$0.04	2	2
Washington	Miscellaneous	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	107	13	$15	2.5%	90%	$0.02	2	2
Washington	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	307	15	$76	1.0%	98%	$0.03	2	2
Washington	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	5	10	$1	1.0%	85%	$0.03	0.04	0.04
Washington	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	15	15	$13	2.5%	95%	$0.10	0.34	0.34
Washington	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	192	10	$159	1.0%	80%	$0.12	0.05	0.05
Washington	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	261	10	$216	1.0%	80%	$0.12	0.06	0.06
Washington	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	28	8	$2	2.5%	95%	$0.02	0.02	0.02
Washington	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	70	5	$11	5.0%	85%	$0.04	0.10	0.10
Washington	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	307	15	$76	1.0%	98%	$0.03	0.09	0.09

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	5	10	$1	1.0%	85%	$0.03	0.00	0.00
Washington	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	15	15	$13	2.5%	95%	$0.10	0.01	0.01
Washington	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	21	20	$7	100%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	38	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	54	20	$210	100%	N/A	$0.39	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	67	20	$281	100%	N/A	$0.42	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	76	20	$42	100%	N/A	$0.06	98	111
Washington	Miscellaneous	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	322	20	$57	8.8%	100%	$0.02	173	173
Washington	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	21	20	$7	100%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	38	20	$16	100%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	54	20	$210	100%	N/A	$0.39	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	67	20	$281	100%	N/A	$0.42	0.00	0.00
Washington	Miscellaneous	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	76	20	$42	100%	N/A	$0.06	8	8
Washington	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	550	9	$73	100%	N/A	$0.02	3,198	3,278
Washington	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	1,892	4	$7,095	10%	50%	$1.06	538	538
Washington	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	550	9	$73	100%	N/A	$0.02	118	118
Washington	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	1,886	4	$7,095	10%	50%	$1.07	18	18
Washington	Miscellaneous	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	5,872	15	$13,680	15%	67%	$0.21	1,507	1,507
Washington	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,957	15	$787	75%	76%	$0.04	2,745	2,745
Washington	Miscellaneous	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	489	18	$1,080	45%	65%	$0.18	334	334
Washington	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,936	14	$7,740	5.0%	94%	$0.32	319	319
Washington	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	880	12	$5,450	1.0%	75%	$0.63	15	15
Washington	Miscellaneous	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,957	12	$59	10%	39%	$0.00	174	174
Washington	Miscellaneous	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,206	25	$3,510	45%	69%	$0.11	2,264	2,264
Washington	Miscellaneous	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	451	25	$1,215	25%	85%	$0.27	208	208
Washington	Miscellaneous	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	822	20	$870	45%	59%	$0.08	470	470
Washington	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,840	25	$4,230	15%	84%	$0.06	1,836	1,836
Washington	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	876	25	$1,305	15%	90%	$0.15	241	241

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$1,087	10%	85%	.	0.00	0.00
Washington	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$10,399	10%	74%	.	0.00	0.00
Washington	Miscellaneous	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,446	7	$887	90%	85%	$0.05	3,810	3,810
Washington	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,469	25	$5	15%	90%	$0.00	611	611
Washington	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,252	25	$83	15%	72%	$0.00	436	436
Washington	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,003	15	$787	75%	76%	$0.07	50	50
Washington	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,505	14	$7,740	5.0%	94%	$0.62	5	5
Washington	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	451	12	$5,450	1.0%	75%	$1.17	0.28	0.28
Washington	Miscellaneous	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	231	25	$1,215	75%	85%	$0.52	8	8
Washington	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	449	25	$1,305	35%	90%	$0.29	8	8
Washington	Miscellaneous	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,003	15	$4,500	10%	75%	$0.38	5	5
Washington	Miscellaneous	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,510	30	$1,510	29%	98%	$0.07	24	24
Washington	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,266	25	$5	80%	90%	$0.00	61	61
Washington	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	135	10	$18	100%	N/A	$0.02	454	454
Washington	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	135	10	$18	100%	N/A	$0.02	17	17
Washington	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,268	10	$551	5.0%	90%	$0.04	729	729
Washington	Miscellaneous	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,402	15	$13,680	15%	67%	$0.47	2,428	2,428
Washington	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	93	18	$200	95%	65%	$0.23	411	411
Washington	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	115	15	$29	95%	76%	$0.03	568	568
Washington	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,891	20	$501	55%	45%	$0.02	4,852	4,852
Washington	Miscellaneous	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	79	7	$22	65%	25%	$0.05	0.00	0.00
Washington	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	181	18	$1,705	5.0%	59%	$1.00	38	38
Washington	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	1,917	10	$551	5.0%	90%	$0.04	21	21

Table C-2.2. Commercial Measure Details

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Washington	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	559	18	$1,200	95%	50%	$0.23	64	64
Washington	Miscellaneous	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	3,375	50	$11,250	16%	98%	$0.29	92	92
Washington	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	97	15	$29	95%	76%	$0.04	15	15
Washington	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,444	20	$501	55%	45%	$0.02	100	100
Washington	Miscellaneous	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,442	30	$1,442	29%	98%	$0.09	62	62
Washington	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	153	18	$1,705	5.0%	59%	$1.18	1	1
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	981	15	$192	75%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	988	15	$322	75%	N/A	$0.05	0.00	0.00
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,011	15	$556	75%	N/A	$0.08	0.84	1
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,022	15	$462	75%	N/A	$0.07	3	5
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	981	15	$192	75%	N/A	$0.04	0.00	0.00
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	988	15	$322	75%	N/A	$0.05	0.00	0.00
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,011	15	$556	75%	N/A	$0.08	0.04	0.04
Washington	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,022	15	$462	75%	N/A	$0.07	0.20	0.21
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$-0.23	0.11	0.11
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$1	0.5%	94%	$-0.46	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	3	14	$3	0.5%	97%	$-0.22	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	4	14	$8	0.5%	99%	$-0.07	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	1	14	$4	0.5%	99%	$-0.61	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	0.90	14	$2	0.5%	99%	$-1.06	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	38	10	$1,250	55%	94%	$4.71	7	7
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	1	12	$5	75%	35%	$0.41	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$1	75%	35%	$0.42	0.05	0.05
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$9	75%	55%	$0.40	0.00	0.02
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$6	75%	55%	$0.40	0.29	0.29
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	95%	$0.08	0.01	0.01
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	94%	$0.08	0.01	0.01
Washington	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	153	25	$800	2.5%	100%	$0.51	1	1
Washington	Miscellaneous	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	90%	$0.44	1	1
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	12	9	$12	95%	25%	$0.13	1	1
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.05	69	69
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	63	10	$3	95%	85%	$-0.09	18	18
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	162	10	$33	95%	62%	$-0.06	35	35
Washington	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	19	10	$176	75%	95%	$1.31	5	5
Washington	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	87	10	$159	2.5%	94%	$0.26	0.38	0.38

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$-0.23	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	2	14	$1	0.5%	94%	$-0.46	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	3	14	$3	0.5%	97%	$-0.22	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	4	14	$8	0.5%	99%	$-0.07	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	1	14	$4	0.5%	99%	$-0.61	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	0.90	14	$2	0.5%	99%	$-1.06	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	38	10	$1,250	55%	94%	$4.71	0.25	0.25
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	1	12	$5	75%	35%	$0.41	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$1	75%	35%	$0.42	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$9	75%	55%	$0.40	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$6	75%	55%	$0.40	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	95%	$0.08	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	94%	$0.08	0.00	0.00
Washington	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	153	25	$640	2.5%	100%	$0.41	0.01	0.01
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	12	9	$0.09	95%	25%	$-0.03	0.03	0.03

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.05	2	2
Washington	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	63	10	$3	95%	85%	$-0.09	0.64	0.64
Washington	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	19	10	$176	75%	95%	$1.31	0.17	0.17
Washington	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	87	10	$159	2.5%	94%	$0.26	0.01	0.01
Washington	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	598	15	$1,136	75%	N/A	$0.26	378	432
Washington	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	933	15	$1,728	75%	N/A	$0.24	1,793	2,049
Washington	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	22	15	$72	100%	N/A	$0.37	0.00	0.00
Washington	Miscellaneous	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	22	15	$72	100%	N/A	$0.37	0.00	0.00
Washington	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	598	15	$1,136	75%	N/A	$0.26	17	17
Washington	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	933	15	$1,728	75%	N/A	$0.24	83	85
Washington	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	22	15	$72	100%	N/A	$0.37	0.00	0.00
Washington	Miscellaneous	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	22	15	$72	100%	N/A	$0.37	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$-0.23	0.81	0.99
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$1	0.5%	94%	$-0.46	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	3	14	$3	0.5%	97%	$-0.22	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	4	14	$8	0.5%	99%	$-0.07	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	1	14	$4	0.5%	99%	$-0.61	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	0.90	14	$2	0.5%	99%	$-1.06	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	82	10	$1,250	25%	94%	$2.20	52	52
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	1	12	$5	75%	35%	$0.41	0.00	0.10
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$1	75%	35%	$0.42	0.42	0.50
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	3	12	$9	75%	55%	$0.40	0.00	0.28
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$6	75%	55%	$0.40	2	2
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.08	0.58	0.71
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.08	0.53	0.65
Washington	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	329	25	$800	2.5%	100%	$0.24	22	22
Washington	Miscellaneous	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	16	12	$25	80%	90%	$0.20	31	31
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	26	9	$12	95%	25%	$0.04	16	16
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	214	4	$65	95%	93%	$0.05	513	513
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	63	10	$3	95%	85%	$-0.09	139	139
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	162	10	$33	95%	62%	$-0.06	259	259
Washington	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	41	10	$176	75%	95%	$0.59	79	79
Washington	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	187	10	$159	2.5%	94%	$0.12	9	9
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$-0.23	0.02	0.02
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	2	14	$1	0.5%	94%	$-0.46	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	3	14	$3	0.5%	97%	$-0.22	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	4	14	$8	0.5%	99%	$-0.07	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	1	14	$4	0.5%	99%	$-0.61	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	0.90	14	$2	0.5%	99%	$-1.06	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	82	10	$1,250	25%	94%	$2.20	1	1
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	1	12	$5	75%	35%	$0.41	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$1	75%	35%	$0.42	0.01	0.01
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	3	12	$9	75%	55%	$0.40	0.00	0.00
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$6	75%	55%	$0.40	0.05	0.05
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.08	0.01	0.01
Washington	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.08	0.01	0.01
Washington	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	329	25	$640	2.5%	100%	$0.19	0.20	0.20
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	26	9	$0.09	95%	25%	$-0.03	0.46	0.46
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	214	4	$65	95%	93%	$0.05	14	14
Washington	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	63	10	$3	95%	85%	$-0.09	3	3
Washington	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	41	10	$176	75%	95%	$0.59	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	187	10	$159	2.5%	94%	$0.12	0.27	0.27
Washington	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	121	4	$13	100%	N/A	$0.03	13	13
Washington	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	121	4	$13	100%	N/A	$0.03	0.24	0.24
Washington	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	4,663	12	$786	90%	90%	$0.02	271	271
Washington	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	420	12	$1,097	70%	86%	$0.35	18	18
Washington	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	943	12	$229	95%	85%	$0.03	54	54
Washington	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	1,644	12	$931	40%	45%	$0.07	0.00	0.00
Washington	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	2,680	12	$1,713	35%	21%	$0.08	14	14
Washington	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	4,630	12	$2,608	39%	75%	$0.07	96	96
Washington	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	4,663	12	$786	90%	90%	$0.02	9	9
Washington	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	420	12	$1,097	70%	86%	$0.35	0.62	0.62
Washington	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	943	12	$229	95%	85%	$0.03	1	1
Washington	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	1,644	12	$931	40%	45%	$0.07	0.00	0.00
Washington	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	2,680	12	$1,713	35%	21%	$0.08	0.49	0.49
Washington	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	4,630	12	$2,608	39%	75%	$0.07	3	3
Washington	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	244	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	624	15	$408	100%	N/A	$0.08	0.00	0.00
Washington	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,174	15	$-8552.4474	16%	N/A	$-0.25	36	46
Washington	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	155	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	396	15	$326	100%	N/A	$0.10	0.00	0.00
Washington	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,281	15	$-6235.1107	16%	N/A	$-0.30	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	946	15	$787	45%	98%	$0.10	184	184
Washington	Restaurant	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,419	10	$2,551	10%	50%	$0.26	30	30
Washington	Restaurant	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	946	5	$720	95%	72%	$0.18	272	272
Washington	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,365	15	$4,687	50%	94%	$0.23	435	435
Washington	Restaurant	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	236	18	$540	45%	65%	$0.16	23	23
Washington	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	425	12	$5,450	65%	75%	$1.10	71	71
Washington	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	946	40	$22,792	2.0%	**%	$2.13	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	473	12	$91	40%	39%	$0.01	24	24
Washington	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	21	25	$1,755	45%	59%	$0.20	1	1
Washington	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$607	25%	85%	.	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	397	20	$435	45%	56%	$0.07	33	33
Washington	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,115	15%	81%	.	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$652	15%	90%	.	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$543	10%	85%	.	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,199	10%	70%	.	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,182	7	$443	90%	85%	$0.05	298	298
Washington	Restaurant	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	471	10	$809	35%	66%	$0.25	32	32
Washington	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,193	25	$8	15%	90%	$0.00	47	47
Washington	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,088	25	$128	15%	69%	$0.01	32	32
Washington	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	551	15	$787	45%	98%	$0.17	3	3
Washington	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,379	15	$4,687	50%	94%	$0.40	9	9
Washington	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	248	12	$5,450	65%	75%	$2.00	1	1
Washington	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	551	40	$22,792	2.0%	**%	$3.65	0.00	0.00
Washington	Restaurant	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	551	15	$2,250	10%	75%	$0.33	0.52	0.52
Washington	Restaurant	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	665	30	$665	20%	100%	$0.06	1	1
Washington	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	696	25	$8	80%	90%	$0.00	5	5
Washington	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	26	6	$0.56	100%	N/A	$0.00	15	15

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	26	6	$0.56	100%	N/A	$0.00	0.54	0.54
Washington	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	16	4	$18	100%	N/A	$0.32	0.55	0.55
Washington	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	16	4	$18	100%	N/A	$0.32	0.12	0.12
Washington	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.08	100%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.16	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.16	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.55	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.98	100%	N/A	$0.02	0.45	0.52
Washington	Restaurant	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	13	20	$3	8.8%	100%	$0.02	0.65	0.65
Washington	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.08	100%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.16	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.16	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.55	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.98	100%	N/A	$0.02	0.03	0.03
Washington	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	583	15	$1,520	100%	N/A	$0.30	0.00	0.00
Washington	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,526	15	$3,040	100%	N/A	$0.23	15	18
Washington	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,001	15	$787	45%	98%	$0.09	7	7
Washington	Restaurant	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	410	18	$540	45%	65%	$0.14	1	1
Washington	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	962	14	$3,870	5.0%	94%	$0.49	0.72	0.72
Washington	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	739	12	$5,450	65%	75%	$0.97	5	5
Washington	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,001	40	$22,792	2.0%	**%	$2.01	0.00	0.00
Washington	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,081	30	$90,131	5.0%	N/A	$2.03	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,232	12	$91	40%	39%	$0.01	2	2
Washington	Restaurant	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,067	25	$1,755	45%	59%	$0.16	4	4
Washington	Restaurant	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	161	25	$607	25%	85%	$0.37	0.52	0.52
Washington	Restaurant	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	690	20	$435	45%	56%	$0.06	2	2
Washington	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,473	25	$2,115	15%	81%	$0.14	2	2
Washington	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	289	25	$652	15%	90%	$0.22	0.57	0.57
Washington	Restaurant	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$543	10%	85%	.	0.00	0.00
Washington	Restaurant	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,199	10%	70%	.	0.00	0.00
Washington	Restaurant	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,053	7	$443	90%	85%	$0.04	23	23
Washington	Restaurant	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	471	10	$809	35%	66%	$0.25	1	1
Washington	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,073	25	$8	15%	90%	$0.00	3	3
Washington	Restaurant	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,890	25	$128	15%	69%	$0.01	2	2
Washington	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	350	15	$1,216	100%	N/A	$0.40	0.00	0.00
Washington	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	883	15	$2,432	100%	N/A	$0.32	0.43	0.44
Washington	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	545	15	$787	45%	98%	$0.17	0.13	0.13
Washington	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	524	14	$3,870	5.0%	94%	$0.89	0.01	0.01
Washington	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	402	12	$5,450	65%	75%	$1.79	0.11	0.11
Washington	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	545	40	$22,792	2.0%	**%	$3.70	0.00	0.00
Washington	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,471	30	$46,298	5.0%	N/A	$1.70	0.05	0.05
Washington	Restaurant	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	87	25	$607	75%	85%	$0.68	0.02	0.02
Washington	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	157	25	$652	35%	90%	$0.41	0.02	0.02
Washington	Restaurant	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	894	15	$2,250	10%	75%	$0.29	0.03	0.03
Washington	Restaurant	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,079	30	$1,079	20%	100%	$0.09	0.08	0.08
Washington	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,129	25	$8	80%	90%	$0.00	0.38	0.38
Washington	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	210	8	$58	5.0%	95%	$0.05	6	6
Washington	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,150	8	$322	75%	70%	$0.05	420	420

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	955	15	$1,291	62%	90%	$0.16	370	370
Washington	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	483	8	$411	45%	64%	$0.14	75	75
Washington	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	36	13	$54	75%	95%	$0.19	18	18
Washington	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,049	17	$1,392	5.0%	95%	$0.07	67	67
Washington	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	210	8	$58	5.0%	95%	$0.05	0.24	0.24
Washington	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,150	8	$322	75%	70%	$0.05	14	14
Washington	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	955	15	$1,291	62%	90%	$0.16	12	12
Washington	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	483	8	$411	45%	64%	$0.14	2	2
Washington	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	36	13	$54	75%	95%	$0.19	0.60	0.60
Washington	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,049	17	$1,392	5.0%	95%	$0.07	2	2
Washington	Restaurant	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	166	10	$187	0.5%	95%	$0.16	0.46	0.46
Washington	Restaurant	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,759	8	$2,250	5.0%	98%	$0.22	50	50
Washington	Restaurant	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,319	8	$1,687	5.0%	98%	$0.22	37	37
Washington	Restaurant	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	819	6	$304	25%	80%	$0.05	96	96
Washington	Restaurant	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	502	6	$255	25%	80%	$0.09	58	58
Washington	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	418	13	$172	100%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	651	13	$549	100%	N/A	$0.11	257	266
Washington	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,142	13	$4,872	25%	N/A	$0.57	150	155
Washington	Restaurant	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	759	8	$411	5.0%	64%	$0.09	13	13
Washington	Restaurant	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	625	8	$44	10%	100%	$0.01	34	34
Washington	Restaurant	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	112	15	$39	100%	N/A	$0.38	0.00	0.00

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Washington	Restaurant	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	138	15	$173	95%	N/A	$-0.39	33	33
Washington	Restaurant	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	123	16	$1,274	50%	N/A	$-0.21	1	1
Washington	Restaurant	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	78	10	$-2.0809191	25%	N/A	$-0.76	0.00	0.00
Washington	Restaurant	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	39	15	$806	100%	N/A	$-1.91	0.00	0.00
Washington	Restaurant	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	51	8	$411	5.0%	64%	$1.35	1	1
Washington	Restaurant	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	42	8	$44	10%	95%	$0.18	2	2
Washington	Restaurant	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	394	11	$153	95%	50%	$0.05	130	130
Washington	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	78	13	$67	95%	98%	$0.11	51	51
Washington	Restaurant	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	260	10	$187	0.5%	95%	$0.10	0.02	0.02
Washington	Restaurant	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,406	8	$2,250	5.0%	98%	$0.27	1	1
Washington	Restaurant	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,054	8	$1,687	5.0%	98%	$0.27	1	1
Washington	Restaurant	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	634	6	$154	25%	80%	$0.01	2	2
Washington	Restaurant	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	286	6	$111	25%	80%	$0.06	1	1
Washington	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	78	13	$67	95%	98%	$0.11	1	1
Washington	Restaurant	Lighting Interior Other	Lighting Package, High Efficiency	15% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,950	13	$3,311	100%	N/A	$0.21	44	44
Washington	Restaurant	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	1,568	30	$1,568	20%	100%	$0.09	4	4
Washington	Restaurant	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,183	8	$411	5.0%	64%	$0.06	0.73	0.73
Washington	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	16,510	4	$154	85%	N/A	$-0.00	0.00	396
Washington	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	14,442	1	$101	100%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,824	1	$79	100%	N/A	$-0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	16,647	12	$1,912	15%	N/A	$0.01	101	605
Washington	Restaurant	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	916	8	$411	5.0%	64%	$0.08	8	8
Washington	Restaurant	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	755	8	$44	10%	95%	$0.01	20	20
Washington	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.64	10%	90%	$0.05	0.14	0.14
Washington	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	40	4	$0.00	10%	45%	$0.00	1	1
Washington	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	71	10	$0.35	95%	75%	$0.00	35	35
Washington	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	704	10	$498	95%	86%	$0.10	398	398
Washington	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.33	5.0%	86%	$0.01	0.24	0.24
Washington	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	45	4	$9	60%	90%	$0.06	16	16
Washington	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.64	10%	90%	$0.05	0.00	0.00
Washington	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	40	4	$0.00	10%	45%	$0.00	0.04	0.04
Washington	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	71	10	$0.35	95%	75%	$0.00	1	1
Washington	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	704	10	$498	95%	86%	$0.10	13	13
Washington	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.33	5.0%	86%	$0.01	0.00	0.00
Washington	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	45	4	$9	60%	90%	$0.06	0.58	0.58
Washington	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	81	6	$89	100%	N/A	$0.23	1	1
Washington	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	81	6	$89	100%	N/A	$0.23	0.08	0.08
Washington	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	41	6	$4	100%	N/A	$0.02	2	2
Washington	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	41	6	$4	100%	N/A	$0.02	0.00	0.00
Washington	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	960	8	$82	25%	45%	$0.01	59	59
Washington	Restaurant	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	1,611	15	$243	10%	90%	$0.02	80	80
Washington	Restaurant	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	526	15	$161	10%	90%	$0.04	26	26
Washington	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,078	10	$894	10%	80%	$0.12	47	47
Washington	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,464	10	$1,212	10%	80%	$0.12	64	64
Washington	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	283	10	$3,300	5.0%	68%	$1.69	5	5
Washington	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	158	8	$15	1.0%	95%	$0.02	0.83	0.83

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Washington	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	208	12	$197	95%	77%	$0.13	83	83
Washington	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	396	5	$63	30%	85%	$0.04	54	54
Washington	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	1,336	3	$209	10%	85%	$0.06	60	60
Washington	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	164	12	$-38.521119	95%	81%	$-0.03	69	69
Washington	Restaurant	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	604	13	$86	10%	90%	$0.02	28	28
Washington	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	298	4	$215	5.0%	20%	$0.20	1	1
Washington	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	30	10	$5	2.5%	85%	$0.03	0.35	0.35
Washington	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	169	15	$152	35%	95%	$0.10	29	29
Washington	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	960	8	$82	25%	45%	$0.01	2	2
Washington	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	1,078	10	$894	10%	80%	$0.12	1	1
Washington	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	1,464	10	$1,212	10%	80%	$0.12	2	2
Washington	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	283	10	$3,300	5.0%	68%	$1.69	0.18	0.18
Washington	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	158	8	$15	1.0%	95%	$0.02	0.02	0.02
Washington	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	208	12	$197	95%	77%	$0.13	2	2
Washington	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	396	5	$63	30%	85%	$0.04	1	1
Washington	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	668	3	$81	5.0%	90%	$0.04	0.56	0.56
Washington	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	164	12	$-38.521119	95%	81%	$-0.03	2	2
Washington	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	298	4	$215	5.0%	20%	$0.20	0.05	0.05
Washington	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	30	10	$5	2.5%	85%	$0.03	0.01	0.01
Washington	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	169	15	$152	35%	95%	$0.10	1	1
Washington	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	10	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	19	20	$8	100%	N/A	$0.04	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	27	20	$106	100%	N/A	$0.39	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	34	20	$142	100%	N/A	$0.42	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	38	20	$21	100%	N/A	$0.06	4	5
Washington	Restaurant	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	162	20	$29	8.8%	100%	$0.02	8	8

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Washington	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	10	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	19	20	$8	100%	N/A	$0.04	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	27	20	$106	100%	N/A	$0.39	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	34	20	$142	100%	N/A	$0.42	0.00	0.00
Washington	Restaurant	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	38	20	$21	100%	N/A	$0.06	0.40	0.40
Washington	Restaurant	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	235	18	$540	45%	65%	$0.13	22	22
Washington	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,410	14	$3,870	5.0%	94%	$0.33	21	21
Washington	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	423	12	$5,450	65%	75%	$0.88	65	65
Washington	Restaurant	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	940	12	$91	40%	39%	$0.01	45	45
Washington	Restaurant	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,540	25	$1,755	45%	59%	$0.11	125	125
Washington	Restaurant	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	216	25	$607	25%	85%	$0.28	13	13
Washington	Restaurant	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	395	20	$435	45%	56%	$0.06	28	28
Washington	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,261	25	$2,115	15%	81%	$0.09	78	78
Washington	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	420	25	$652	15%	90%	$0.15	15	15
Washington	Restaurant	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$543	10%	85%	.	0.00	0.00
Washington	Restaurant	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,199	10%	70%	.	0.00	0.00
Washington	Restaurant	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,175	7	$443	90%	85%	$0.04	250	250
Washington	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,186	25	$8	15%	90%	$0.00	40	40
Washington	Restaurant	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,082	25	$128	15%	69%	$0.01	27	27
Washington	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	688	14	$3,870	5.0%	94%	$0.68	0.35	0.35
Washington	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	206	12	$5,450	65%	75%	$1.65	1	1
Washington	Restaurant	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	105	25	$607	75%	85%	$0.57	0.53	0.53
Washington	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	205	25	$652	35%	90%	$0.31	0.50	0.50
Washington	Restaurant	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	459	15	$2,250	10%	75%	$0.27	0.35	0.35
Washington	Restaurant	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	553	30	$553	20%	100%	$0.04	0.84	0.84
Washington	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	579	25	$8	80%	90%	$0.00	3	3
Washington	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,865	18	$6,250	95%	25%	$0.36	308	308

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Washington	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	99	15	$14	95%	76%	$0.02	47	47
Washington	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,484	20	$250	55%	45%	$0.01	405	405
Washington	Restaurant	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	39	7	$11	65%	25%	$0.05	0.00	0.00
Washington	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,865	18	$6,250	95%	25%	$0.36	10	10
Washington	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	92	15	$14	95%	76%	$0.02	1	1
Washington	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,323	20	$250	55%	45%	$0.01	9	9
Washington	Restaurant	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,099	30	$1,099	20%	100%	$0.09	3	3
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	11,040	15	$289	75%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	11,118	15	$483	75%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	11,371	15	$834	75%	N/A	$0.01	0.57	0.97
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	11,493	15	$693	75%	N/A	$0.01	2	4
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	11,040	15	$289	75%	N/A	$0.00	0.00	0.00
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	11,118	15	$483	75%	N/A	$0.01	0.00	0.00
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	11,371	15	$834	75%	N/A	$0.01	0.02	0.02
Washington	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	11,493	15	$693	75%	N/A	$0.01	0.11	0.12
Washington	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	432	10	$625	75%	94%	$0.21	7	7
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	15	12	$48	20%	35%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	20%	35%	$0.38	0.00	0.00

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Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	27	12	$84	20%	55%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	17	12	$52	20%	55%	$0.39	0.04	0.04
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	75%	95%	$0.07	51	52
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	75%	94%	$0.07	46	47
Washington	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,730	25	$1,200	2.5%	100%	$0.07	0.54	0.54
Washington	Restaurant	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	86	12	$38	80%	90%	$0.06	0.78	0.78
Washington	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	137	9	$15	95%	25%	$-0.02	0.81	0.81
Washington	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.05	4	4
Washington	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	216	10	$220	75%	95%	$0.11	3	3
Washington	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	986	10	$894	45%	94%	$0.13	4	4
Washington	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	432	10	$625	75%	94%	$0.21	0.26	0.26
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	15	12	$48	20%	35%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	20%	35%	$0.38	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	27	12	$84	20%	55%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	17	12	$52	20%	55%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	75%	95%	$0.07	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	75%	94%	$0.07	1	1
Washington	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,730	25	$960	2.5%	100%	$0.05	0.00	0.00
Washington	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	137	9	$0.11	95%	25%	$-0.03	0.02	0.02
Washington	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.05	0.15	0.15
Washington	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	216	10	$220	75%	95%	$0.11	0.13	0.13
Washington	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	986	10	$894	45%	94%	$0.13	0.17	0.17
Washington	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	6,733	15	$1,704	75%	N/A	$0.04	265	320
Washington	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	10,497	15	$2,592	75%	N/A	$0.03	1,258	1,520
Washington	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	258	15	$108	100%	N/A	$0.05	0.00	0.00
Washington	Restaurant	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	258	15	$108	100%	N/A	$0.05	0.00	0.00
Washington	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	6,733	15	$1,704	75%	N/A	$0.04	11	11
Washington	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	10,497	15	$2,592	75%	N/A	$0.03	53	55
Washington	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	258	15	$108	100%	N/A	$0.05	0.00	0.00
Washington	Restaurant	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	258	15	$108	100%	N/A	$0.05	0.00	0.00
Washington	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	925	10	$625	75%	94%	$0.10	120	120
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	15	12	$48	75%	35%	$0.39	0.00	0.05
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	35%	$0.38	0.24	0.29
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	27	12	$84	75%	55%	$0.39	0.00	0.16

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	17	12	$52	75%	55%	$0.39	1	1
Washington	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,908	12	$1,654	85%	95%	$0.07	432	526
Washington	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	85%	95%	$0.07	396	483
Washington	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	3,703	25	$1,200	2.5%	100%	$0.03	12	12
Washington	Restaurant	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	185	12	$38	80%	90%	$0.03	17	17
Washington	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	294	9	$15	95%	25%	$-0.03	12	12
Washington	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.05	33	33
Washington	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	462	10	$220	75%	95%	$0.04	61	61
Washington	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,111	10	$894	25%	94%	$0.06	62	62
Washington	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	925	10	$625	75%	94%	$0.10	3	3
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	15	12	$48	75%	35%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	35%	$0.38	0.00	0.00
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	27	12	$84	75%	55%	$0.39	0.00	0.00
Washington	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	17	12	$52	75%	55%	$0.39	0.03	0.03
Washington	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	85%	95%	$0.07	11	11
Washington	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	85%	95%	$0.07	10	10
Washington	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	3,703	25	$960	2.5%	100%	$0.03	0.11	0.11

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Washington	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	294	9	$0.11	95%	25%	$-0.03	0.35	0.35
Washington	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.05	0.91	0.91
Washington	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	462	10	$220	75%	95%	$0.04	1	1
Washington	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,111	10	$894	25%	94%	$0.06	1	1
Washington	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	3,974	4	$454	100%	N/A	$0.03	325	378
Washington	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	6,131	4	$454	95%	30%	$0.02	883	883
Washington	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	3,974	4	$454	100%	N/A	$0.03	5	5
Washington	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	6,131	4	$454	95%	30%	$0.02	32	32
Washington	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	104	12	$17	90%	90%	$0.02	7	7
Washington	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	9	12	$24	35%	90%	$0.35	0.26	0.26
Washington	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	32	12	$7	95%	85%	$0.03	2	2
Washington	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	56	12	$32	26%	40%	$0.07	0.00	0.00
Washington	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	92	12	$59	75%	21%	$0.08	1	1
Washington	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	159	12	$89	14%	75%	$0.07	1	1
Washington	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	104	12	$17	90%	90%	$0.02	0.26	0.26
Washington	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	9	12	$24	35%	90%	$0.35	0.00	0.00
Washington	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	32	12	$7	95%	85%	$0.03	0.08	0.08
Washington	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	56	12	$32	26%	40%	$0.07	0.00	0.00
Washington	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	92	12	$59	75%	21%	$0.08	0.04	0.04
Washington	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	159	12	$89	14%	75%	$0.07	0.05	0.05
Washington	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	731	15	$4,871	25%	94%	$0.78	4	4
Washington	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	91	5	$3,319	95%	81%	$8.60	1	1
Washington	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	553	10	$20,432	25%	70%	$5.36	2	2
Washington	School	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	365	15	$47,438	45%	90%	$15.10	3	3

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Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,652	20	$8,420	100%	N/A	$0.52	21	28
Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	275	20	$1,403	100%	N/A	$0.52	0.00	0.00
Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,009	20	$5,146	100%	N/A	$0.52	0.00	0.00
Washington	School	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,194	15	$59,235	15%	67%	$0.74	5	5
Washington	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	731	15	$6,819	65%	98%	$1.09	11	11
Washington	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	585	7	$2,525	10%	94%	$0.80	1	1
Washington	School	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	1,024	15	$226	65%	35%	$0.03	5	5
Washington	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	292	13	$1,828	75%	65%	$0.79	3	3
Washington	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	731	15	$3,409	75%	76%	$0.13	9	9
Washington	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	329	12	$5,450	25%	75%	$0.52	1	1
Washington	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	731	40	$97,388	2.0%	**%	$23.86	0.00	0.00
Washington	School	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	365	12	$513	10%	39%	$0.02	0.29	0.29
Washington	School	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	33	25	$15,198	45%	58%	$0.27	0.18	0.18
Washington	School	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$5,261	25%	85%	.	0.00	0.00
Washington	School	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	84%	.	0.00	0.00
Washington	School	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Washington	School	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Washington	School	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	75%	.	0.00	0.00
Washington	School	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WA State Code)	No Insulation	Per Building	Existing	109	15	$400	65%	45%	$0.42	0.67	0.67
Washington	School	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	914	7	$3,841	90%	85%	$0.18	14	14
Washington	School	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	2,656	10	$4,529	35%	66%	$0.25	11	11
Washington	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	923	25	$47	15%	90%	$0.00	2	2
Washington	School	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	841	25	$719	15%	74%	$0.02	1	1
Washington	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	538	15	$2,598	0.0%	94%	$0.56	0.00	0.00

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Washington	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	67	5	$3,319	95%	81%	$11.67	0.04	0.04
Washington	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	407	10	$18,389	25%	70%	$6.55	0.06	0.06
Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	1,432	20	$7,578	100%	N/A	$0.54	1	1
Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	238	20	$1,263	100%	N/A	$0.54	0.00	0.00
Washington	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	875	20	$4,631	100%	N/A	$0.54	0.00	0.00
Washington	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	538	15	$6,819	65%	98%	$1.47	0.30	0.30
Washington	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	430	7	$2,273	10%	94%	$0.98	0.03	0.03
Washington	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	215	13	$1,645	75%	65%	$0.96	0.09	0.09
Washington	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	538	15	$3,409	75%	76%	$0.25	0.25	0.25
Washington	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	242	12	$5,450	25%	75%	$1.02	0.03	0.03
Washington	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	538	40	$97,388	2.0%	**%	$32.40	0.00	0.00
Washington	School	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	538	15	$19,485	10%	75%	$1.45	0.03	0.03
Washington	School	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,112	30	$1,112	60%	75%	$0.03	0.28	0.28
Washington	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	679	25	$47	80%	90%	$0.00	0.30	0.30
Washington	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	485	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	931	15	$2,067	100%	N/A	$0.26	28	40
Washington	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	6,257	15	$-44427.158	10%	N/A	$-1.11	9	13
Washington	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	409	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	785	15	$1,653	100%	N/A	$0.25	1	1
Washington	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	5,276	15	$-33190.302	10%	N/A	$-1.00	0.38	0.40

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,147	15	$4,871	25%	94%	$0.49	42	42
Washington	School	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,443	15	$59,235	15%	67%	$0.65	53	53
Washington	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,147	15	$6,819	65%	98%	$0.69	109	109
Washington	School	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,721	10	$14,731	10%	60%	$1.24	14	14
Washington	School	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,147	5	$4,156	95%	72%	$0.86	109	109
Washington	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,869	15	$40,594	50%	94%	$1.65	175	175
Washington	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,147	15	$3,409	75%	76%	$0.11	74	74
Washington	School	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	286	18	$4,676	45%	65%	$0.57	9	9
Washington	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	516	12	$5,450	25%	75%	$0.45	10	10
Washington	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,147	40	$97,388	2.0%	**%	$15.21	0.00	0.00
Washington	School	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	573	12	$513	10%	39%	$0.02	2	2
Washington	School	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	52	25	$15,198	45%	58%	$0.27	1	1
Washington	School	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$5,261	25%	85%	.	0.00	0.00
Washington	School	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	482	20	$3,769	45%	55%	$0.26	12	12
Washington	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	84%	.	0.00	0.00
Washington	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Washington	School	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Washington	School	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	75%	.	0.00	0.00
Washington	School	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,434	7	$3,841	90%	85%	$0.16	115	115
Washington	School	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	2,656	10	$4,529	35%	66%	$0.25	58	58
Washington	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,448	25	$47	15%	90%	$0.00	17	17
Washington	School	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,321	25	$719	15%	74%	$0.02	12	12
Washington	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	896	15	$2,598	0.0%	94%	$0.34	0.00	0.00
Washington	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	896	15	$6,819	65%	98%	$0.89	3	3
Washington	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	2,240	15	$40,594	50%	94%	$2.11	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	896	15	$3,409	75%	76%	$0.21	2	2
Washington	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	403	12	$5,450	25%	75%	$0.83	0.33	0.33
Washington	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	896	40	$97,388	2.0%	**%	$19.48	0.00	0.00
Washington	School	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	896	15	$19,485	10%	75%	$1.18	0.28	0.28
Washington	School	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,850	30	$1,850	60%	75%	$0.04	2	2
Washington	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,130	25	$47	80%	90%	$0.00	2	2
Washington	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	140	6	$3	100%	N/A	$0.00	73	73
Washington	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	140	6	$3	100%	N/A	$0.00	2	2
Washington	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	537	4	$605	100%	N/A	$0.32	15	15
Washington	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	537	4	$605	100%	N/A	$0.32	3	3
Washington	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	24	20	$0.65	100%	N/A	$0.00	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	16	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	25	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	32	20	$4	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	38	20	$7	100%	N/A	$0.02	3	3
Washington	School	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	104	20	$24	8.8%	100%	$0.02	4	4
Washington	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	24	20	$0.65	100%	N/A	$0.00	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	16	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	25	20	$1	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	32	20	$4	100%	N/A	$0.01	0.00	0.00
Washington	School	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	38	20	$7	100%	N/A	$0.02	0.24	0.25
Washington	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	6,274	15	$8,449	100%	N/A	$0.16	80	100
Washington	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	1,648	15	$4,871	25%	94%	$0.34	9	9
Washington	School	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	32,888	15	$59,235	15%	67%	$0.21	83	83

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,648	15	$6,819	65%	98%	$0.48	25	25
Washington	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	10,962	15	$3,409	75%	76%	$0.04	151	151
Washington	School	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	2,740	18	$4,676	45%	65%	$0.18	18	18
Washington	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	13,971	14	$17,673	5.0%	94%	$0.15	14	14
Washington	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	4,933	12	$5,450	25%	75%	$0.15	20	20
Washington	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,648	40	$97,388	2.0%	**%	$10.59	0.00	0.00
Washington	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	22,290	30	$23,387	5.0%	N/A	$2.16	7	11
Washington	School	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	8,222	12	$513	10%	39%	$0.01	7	7
Washington	School	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	21,430	25	$15,198	45%	58%	$0.07	125	125
Washington	School	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	2,344	25	$5,261	25%	85%	$0.22	10	10
Washington	School	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	4,604	20	$3,769	45%	55%	$0.08	24	24
Washington	School	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	26,629	25	$18,316	15%	84%	$0.07	70	70
Washington	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	5,175	25	$5,650	15%	90%	$0.11	14	14
Washington	School	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Washington	School	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	75%	.	0.00	0.00
Washington	School	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	13,703	7	$3,841	90%	85%	$0.05	211	211
Washington	School	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	2,656	10	$4,529	35%	66%	$0.25	11	11
Washington	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	13,832	25	$47	15%	90%	$0.00	33	33
Washington	School	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	12,616	25	$719	15%	74%	$0.01	25	25
Washington	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	3,079	15	$6,759	100%	N/A	$0.26	1	1
Washington	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	732	15	$2,598	0.0%	94%	$0.41	0.00	0.00
Washington	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	732	15	$6,819	65%	98%	$1.08	0.41	0.41
Washington	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,870	15	$3,409	75%	76%	$0.08	2	2
Washington	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	6,207	14	$17,673	5.0%	94%	$0.34	0.24	0.24

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	2,191	12	$5,450	25%	75%	$0.33	0.34	0.34
Washington	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	732	40	$97,388	2.0%	**%	$23.83	0.00	0.00
Washington	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	11,281	30	$69,180	5.0%	N/A	$2.16	0.25	0.25
Washington	School	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	1,041	25	$5,261	75%	85%	$0.50	0.40	0.40
Washington	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	2,299	25	$5,650	35%	90%	$0.24	0.43	0.43
Washington	School	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	4,870	15	$19,485	10%	75%	$0.47	0.28	0.28
Washington	School	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	10,054	30	$10,054	60%	75%	$0.09	2	2
Washington	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	6,145	25	$47	80%	90%	$0.00	2	2
Washington	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	1,825	8	$507	5.0%	95%	$0.05	52	52
Washington	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,209	8	$949	75%	70%	$0.05	1,013	1,013
Washington	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,665	15	$3,601	62%	90%	$0.16	896	896
Washington	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	932	8	$3,564	90%	35%	$0.65	137	137
Washington	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	26	13	$39	75%	95%	$0.19	11	11
Washington	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	17,751	17	$12,061	5.0%	95%	$0.07	508	508
Washington	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	1,825	8	$507	5.0%	95%	$0.05	1	1
Washington	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,209	8	$949	75%	70%	$0.05	35	35
Washington	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,665	15	$3,601	62%	90%	$0.16	31	31
Washington	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	932	8	$3,564	90%	35%	$0.65	4	4
Washington	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	26	13	$39	75%	95%	$0.19	0.38	0.38
Washington	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	17,751	17	$12,061	5.0%	95%	$0.07	15	15
Washington	School	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,105	10	$1,622	10%	95%	$0.21	55	55
Washington	School	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,593	8	$11,167	30%	81%	$0.41	596	596
Washington	School	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,445	8	$8,375	30%	81%	$0.41	0.00	0.00
Washington	School	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	310	6	$115	10%	80%	$0.05	13	13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	190	6	$96	10%	80%	$0.09	8	8
Washington	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,580	13	$1,769	100%	N/A	$0.08	0.00	0.00
Washington	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,338	13	$6,660	100%	N/A	$0.19	1,500	1,541
Washington	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	8,415	13	$52,647	25%	N/A	$0.79	970	997
Washington	School	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,482	8	$3,564	75%	35%	$0.17	474	474
Washington	School	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	4,145	8	$310	10%	95%	$0.01	201	201
Washington	School	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,054	15	$788	100%	N/A	$0.11	0.00	0.00
Washington	School	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,300	15	$3,184	95%	N/A	$0.25	284	287
Washington	School	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,160	29	$22,881	50%	N/A	$1.78	9	9
Washington	School	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	736	19	$46	25%	N/A	$-0.04	0.00	0.00
Washington	School	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	362	15	$14,513	100%	N/A	$4.39	0.00	0.00
Washington	School	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	354	8	$3,564	75%	35%	$1.70	51	51
Washington	School	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	422	8	$310	10%	95%	$0.12	21	21
Washington	School	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	172	11	$66	95%	50%	$0.05	49	49
Washington	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	34	13	$29	95%	98%	$0.11	19	19
Washington	School	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,000	10	$1,622	10%	95%	$0.24	1	1
Washington	School	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,601	8	$11,167	30%	81%	$0.52	17	17
Washington	School	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,700	8	$8,375	30%	81%	$0.52	0.00	0.00
Washington	School	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	240	6	$58	10%	80%	$0.01	0.37	0.37
Washington	School	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	108	6	$42	10%	80%	$0.06	0.16	0.16

Table C-2.2. Commercial Measure Details

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Washington	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	34	13	$29	95%	98%	$0.11	0.62	0.62
Washington	School	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,502	13	$12,083	100%	N/A	$0.43	63	64
Washington	School	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	10,329	30	$10,329	60%	75%	$0.09	64	64
Washington	School	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,152	8	$3,564	75%	35%	$0.19	14	14
Washington	School	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,339	4	$111	95%	N/A	$-0.00	0.00	0.00
Washington	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,542	1	$73	100%	N/A	$0.00	0.00	0.00
Washington	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,392	1	$58	100%	N/A	$-0.01	0.00	0.00
Washington	School	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,392	12	$1,384	15%	N/A	$0.02	9	19
Washington	School	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	108	8	$3,564	75%	35%	$5.54	15	15
Washington	School	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	129	8	$310	10%	95%	$0.41	6	6
Washington	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	0.80	7	$0.21	10%	90%	$0.05	0.04	0.04
Washington	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	217	4	$0.00	75%	45%	$0.00	44	44
Washington	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	8	8
Washington	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	621	10	$439	95%	86%	$0.10	304	304
Washington	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	2	4	$2	5.0%	86%	$0.30	0.07	0.07
Washington	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	649	4	$129	60%	90%	$0.06	211	211
Washington	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	0.80	7	$0.21	10%	90%	$0.05	0.00	0.00
Washington	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	217	4	$0.00	75%	45%	$0.00	1	1
Washington	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	0.30	0.30
Washington	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	621	10	$439	95%	86%	$0.10	10	10
Washington	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	2	4	$2	5.0%	86%	$0.30	0.00	0.00
Washington	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	649	4	$129	60%	90%	$0.06	7	7
Washington	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	439	6	$479	100%	N/A	$0.23	7	7

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Washington	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	439	6	$479	100%	N/A	$0.23	0.40	0.40
Washington	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	818	6	$95	100%	N/A	$0.02	44	44
Washington	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	818	6	$95	100%	N/A	$0.02	0.00	0.00
Washington	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	363	8	$31	15%	45%	$0.01	6	6
Washington	School	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	610	15	$92	5.0%	90%	$0.02	6	6
Washington	School	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	199	15	$61	5.0%	90%	$0.04	2	2
Washington	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	408	10	$338	25%	80%	$0.12	20	20
Washington	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	554	10	$459	25%	80%	$0.12	27	27
Washington	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	107	10	$3,300	5.0%	68%	$4.46	0.88	0.88
Washington	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	60	8	$5	1.0%	95%	$0.02	0.14	0.14
Washington	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	9	12	$8	95%	77%	$0.13	1	1
Washington	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	505	3	$79	10%	85%	$0.06	10	10
Washington	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	7	12	$-1.683709	95%	81%	$-0.03	1	1
Washington	School	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	228	13	$32	25%	90%	$0.02	12	12
Washington	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	13	4	$9	95%	20%	$0.20	0.59	0.59
Washington	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	11	10	$2	2.5%	85%	$0.03	0.06	0.06
Washington	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	7	15	$6	10%	95%	$0.10	0.16	0.16
Washington	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	363	8	$31	15%	45%	$0.01	0.21	0.21
Washington	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	408	10	$338	25%	80%	$0.12	0.71	0.71
Washington	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	554	10	$459	25%	80%	$0.12	0.96	0.96
Washington	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	107	10	$3,300	5.0%	68%	$4.46	0.03	0.03
Washington	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	60	8	$5	1.0%	95%	$0.02	0.00	0.00
Washington	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	9	12	$8	95%	77%	$0.13	0.05	0.05
Washington	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	252	3	$30	5.0%	90%	$0.04	0.09	0.09
Washington	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	7	12	$-1.683709	95%	81%	$-0.03	0.04	0.04

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Washington	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	13	4	$9	95%	20%	$0.20	0.02	0.02
Washington	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	11	10	$2	2.5%	85%	$0.03	0.00	0.00
Washington	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	7	15	$6	10%	95%	$0.10	0.00	0.00
Washington	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	84	20	$29	100%	N/A	$0.04	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	150	20	$64	100%	N/A	$0.04	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	215	20	$824	100%	N/A	$0.39	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	264	20	$1,105	100%	N/A	$0.42	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	300	20	$164	100%	N/A	$0.06	32	37
Washington	School	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,263	20	$225	8.8%	100%	$0.02	57	57
Washington	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	84	20	$29	100%	N/A	$0.04	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	150	20	$64	100%	N/A	$0.04	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	215	20	$824	100%	N/A	$0.39	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	264	20	$1,105	100%	N/A	$0.42	0.00	0.00
Washington	School	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	300	20	$164	100%	N/A	$0.06	2	2
Washington	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	124	9	$16	100%	N/A	$0.02	61	62
Washington	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	429	4	$1,611	10%	50%	$1.06	10	10
Washington	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	124	9	$16	100%	N/A	$0.02	2	2
Washington	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	428	4	$1,611	10%	50%	$1.07	0.34	0.34
Washington	School	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	49,804	15	$59,235	15%	67%	$0.13	372	372
Washington	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	16,601	15	$3,409	75%	76%	$0.02	678	678
Washington	School	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	4,150	18	$4,676	45%	65%	$0.11	82	82
Washington	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	24,902	14	$17,673	5.0%	94%	$0.09	78	78
Washington	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	7,470	12	$5,450	25%	75%	$0.09	93	93
Washington	School	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	16,601	12	$513	10%	39%	$0.00	42	42
Washington	School	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	38,524	25	$15,198	45%	58%	$0.04	665	665
Washington	School	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	3,826	25	$5,261	25%	85%	$0.14	50	50
Washington	School	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	6,972	20	$3,769	45%	55%	$0.05	107	107
Washington	School	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	39,921	25	$18,316	15%	84%	$0.05	306	306
Washington	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	7,430	25	$5,650	15%	90%	$0.08	59	59

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Washington	School	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$4,707	10%	85%	.	0.00	0.00
Washington	School	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$45,030	10%	75%	.	0.00	0.00
Washington	School	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	20,752	7	$3,841	90%	85%	$0.03	937	937
Washington	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	20,946	25	$47	15%	90%	$0.00	150	150
Washington	School	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	19,105	25	$719	15%	74%	$0.00	111	111
Washington	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	7,209	15	$3,409	75%	76%	$0.05	10	10
Washington	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	10,814	14	$17,673	5.0%	94%	$0.20	1	1
Washington	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	3,244	12	$5,450	25%	75%	$0.20	1	1
Washington	School	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	1,661	25	$5,261	75%	85%	$0.31	1	1
Washington	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	3,227	25	$5,650	35%	90%	$0.17	1	1
Washington	School	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	7,209	15	$19,485	10%	75%	$0.28	1	1
Washington	School	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	14,883	30	$14,883	60%	75%	$0.08	11	11
Washington	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	9,096	25	$47	80%	90%	$0.00	12	12
Washington	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	595	10	$81	100%	N/A	$0.02	168	168
Washington	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	595	10	$81	100%	N/A	$0.02	6	6
Washington	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	6,118	10	$2,389	5.0%	90%	$0.06	166	166
Washington	School	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	9,177	15	$59,235	15%	67%	$0.75	552	552
Washington	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,700	95%	85%	$0.26	544	544
Washington	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	312	15	$128	95%	76%	$0.05	39	39
Washington	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	7,801	20	$2,169	55%	45%	$0.03	1,081	1,081
Washington	School	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	344	7	$97	65%	25%	$0.05	29	29
Washington	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	489	18	$1,705	65%	59%	$0.37	113	113
Washington	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	4,637	10	$2,389	5.0%	90%	$0.07	4	4

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,700	95%	85%	$0.26	18	18
Washington	School	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	14,614	50	$48,713	15%	98%	$0.29	30	30
Washington	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	236	15	$128	95%	76%	$0.06	3	3
Washington	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	5,912	20	$2,169	55%	45%	$0.04	19	19
Washington	School	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	4,786	30	$4,786	60%	75%	$0.09	26	26
Washington	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	371	18	$1,705	63%	59%	$0.49	2	2
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	16,663	15	$674	75%	N/A	$0.01	0.00	0.00
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	16,781	15	$1,128	75%	N/A	$0.01	0.00	0.00
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	17,163	15	$1,946	75%	N/A	$0.02	1	1
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	17,346	15	$1,618	75%	N/A	$0.01	4	5
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	16,663	15	$674	75%	N/A	$0.01	0.00	0.00
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	16,781	15	$1,128	75%	N/A	$0.01	0.00	0.00
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	17,163	15	$1,946	75%	N/A	$0.02	0.05	0.05
Washington	School	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	17,346	15	$1,618	75%	N/A	$0.01	0.22	0.22
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$-0.23	0.93	0.94
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	17	14	$9	5.0%	94%	$-0.47	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	26	14	$27	5.0%	97%	$-0.23	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	32	14	$56	5.0%	99%	$-0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	9	14	$28	5.0%	99%	$-0.64	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	6	14	$20	5.0%	99%	$-1.10	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	653	10	$5,413	55%	94%	$1.20	5	5
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	12	12	$37	20%	35%	$0.41	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	20%	35%	$0.42	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	21	12	$64	20%	55%	$0.40	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$40	20%	55%	$0.40	0.02	0.02
Washington	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$236	70%	95%	$0.07	4	4
Washington	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	380	12	$236	70%	94%	$0.07	4	4
Washington	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,612	25	$2,800	2.5%	100%	$0.11	1	1
Washington	School	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	130	12	$89	80%	8%	$0.09	0.13	0.13
Washington	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	207	9	$28	95%	25%	$-0.02	0.87	0.87
Washington	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.05	8	8
Washington	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	2	2
Washington	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	3	3
Washington	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	326	10	$392	75%	75%	$0.14	3	3
Washington	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,489	10	$338	25%	94%	$0.03	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$-0.23	0.03	0.03
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	17	14	$9	5.0%	94%	$-0.47	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	26	14	$27	5.0%	97%	$-0.23	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	32	14	$56	5.0%	99%	$-0.08	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	9	14	$28	5.0%	99%	$-0.64	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	6	14	$20	5.0%	99%	$-1.10	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	653	10	$5,413	55%	94%	$1.20	0.20	0.20
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	12	12	$37	20%	35%	$0.41	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	20%	35%	$0.42	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	21	12	$64	20%	55%	$0.40	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$40	20%	55%	$0.40	0.00	0.00
Washington	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$236	70%	95%	$0.07	0.16	0.16
Washington	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	380	12	$236	70%	94%	$0.07	0.15	0.15
Washington	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,612	25	$2,240	2.5%	100%	$0.08	0.01	0.01
Washington	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	207	9	$0.20	95%	25%	$-0.04	0.03	0.03

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Washington	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.05	0.29	0.29
Washington	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.06	0.06
Washington	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	326	10	$392	75%	75%	$0.14	0.11	0.11
Washington	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,489	10	$338	25%	94%	$0.03	0.18	0.18
Washington	School	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	10,162	15	$3,978	75%	N/A	$0.05	352	371
Washington	School	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	15,843	15	$6,049	75%	N/A	$0.05	1,672	1,764
Washington	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	390	15	$253	100%	N/A	$0.08	0.00	0.00
Washington	School	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	390	15	$253	100%	N/A	$0.08	0.00	0.00
Washington	School	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	10,162	15	$3,978	75%	N/A	$0.05	16	16
Washington	School	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	15,843	15	$6,049	75%	N/A	$0.05	76	76
Washington	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	390	15	$253	100%	N/A	$0.08	0.00	0.00
Washington	School	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	390	15	$253	100%	N/A	$0.08	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$-0.23	6	8
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	17	14	$9	5.0%	94%	$-0.47	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	26	14	$27	5.0%	97%	$-0.23	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	32	14	$56	5.0%	99%	$-0.08	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	9	14	$28	5.0%	99%	$-0.64	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	6	14	$20	5.0%	99%	$-1.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,397	10	$5,413	25%	94%	$0.56	43	43
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	12	12	$37	75%	35%	$0.41	0.00	0.03
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	35%	$0.42	0.13	0.15
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	21	12	$64	75%	55%	$0.40	0.00	0.08
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$40	75%	55%	$0.40	0.67	0.81
Washington	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	414	12	$236	75%	95%	$0.07	38	47
Washington	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	380	12	$236	75%	95%	$0.07	35	43
Washington	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	5,590	25	$2,800	2.5%	100%	$0.05	17	17
Washington	School	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	279	12	$89	80%	8%	$0.04	2	2
Washington	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	444	9	$28	95%	25%	$-0.02	13	13
Washington	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.05	62	62
Washington	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	15	15
Washington	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	27	27
Washington	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	698	10	$392	75%	75%	$0.05	51	51
Washington	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,186	10	$338	25%	94%	$0.02	90	90
Washington	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$-0.23	0.19	0.19
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	17	14	$9	5.0%	94%	$-0.47	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	26	14	$27	5.0%	97%	$-0.23	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	32	14	$56	5.0%	99%	$-0.08	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	9	14	$28	5.0%	99%	$-0.64	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	6	14	$20	5.0%	99%	$-1.10	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,397	10	$5,413	25%	94%	$0.56	1	1
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	12	12	$37	75%	35%	$0.41	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	35%	$0.42	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	21	12	$64	75%	55%	$0.40	0.00	0.00
Washington	School	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$40	75%	55%	$0.40	0.01	0.01
Washington	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	414	12	$236	75%	95%	$0.07	1	1
Washington	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	380	12	$236	75%	95%	$0.07	0.98	0.98
Washington	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	5,590	25	$2,240	2.5%	100%	$0.04	0.16	0.16
Washington	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	444	9	$0.20	95%	25%	$-0.03	0.38	0.38
Washington	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.05	1	1
Washington	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.41	0.41
Washington	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	698	10	$392	75%	75%	$0.05	1	1

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Washington	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,186	10	$338	25%	94%	$0.02	2	2
Washington	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	561	4	$64	100%	N/A	$0.03	173	202
Washington	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	866	4	$64	95%	30%	$0.02	471	471
Washington	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	561	4	$64	100%	N/A	$0.03	3	3
Washington	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	866	4	$64	95%	30%	$0.02	17	17
Washington	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	117	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	301	15	$186	100%	N/A	$0.07	141	180
Washington	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	2,494	15	$-3903.4247	4.6%	N/A	$-0.24	15	20
Washington	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	80	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	206	15	$149	100%	N/A	$0.08	4	4
Washington	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	1,708	15	$-2845.7685	4.6%	N/A	$-0.26	0.52	0.53
Washington	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	482	15	$778	35%	98%	$0.19	206	206
Washington	Small Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	723	10	$1,164	10%	20%	$0.23	17	17
Washington	Small Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	482	5	$328	95%	72%	$0.16	397	397
Washington	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,206	15	$4,635	50%	94%	$0.45	634	634
Washington	Small Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	120	18	$534	45%	65%	$0.28	34	34
Washington	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	482	40	$22,539	2.0%	**%	$4.13	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	241	12	$72	40%	39%	$0.02	36	36
Washington	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	11	25	$1,735	45%	69%	$0.30	3	3
Washington	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$600	25%	85%	.	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	202	20	$430	45%	60%	$0.13	53	53
Washington	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,091	15%	84%	.	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$645	15%	90%	.	0.00	0.00

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Washington	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$537	10%	85%	.	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,141	10%	75%	.	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	603	7	$438	90%	85%	$0.08	444	444
Washington	Small Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	380	10	$637	35%	66%	$0.24	76	76
Washington	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	608	25	$6	15%	90%	$0.00	70	70
Washington	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	555	25	$101	15%	72%	$0.01	50	50
Washington	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	302	15	$778	35%	98%	$0.30	4	4
Washington	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	756	15	$4,635	50%	94%	$0.71	15	15
Washington	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	302	40	$22,539	2.0%	**%	$6.59	0.00	0.00
Washington	Small Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	302	15	$2,225	10%	75%	$0.56	0.84	0.84
Washington	Small Office	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	612	30	$612	35%	95%	$0.06	5	5
Washington	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	381	25	$6	80%	90%	$0.00	8	8
Washington	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	8	6	$0.18	100%	N/A	$0.00	16	16
Washington	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	8	6	$0.18	100%	N/A	$0.00	0.57	0.57
Washington	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	75	4	$85	100%	N/A	$0.32	8	8
Washington	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	75	4	$85	100%	N/A	$0.32	1	1
Washington	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.07	100%	N/A	$0.00	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.15	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.15	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	3	20	$0.52	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.93	100%	N/A	$0.02	1	1
Washington	Small Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	12	20	$3	8.8%	100%	$0.02	2	2
Washington	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.07	100%	N/A	$0.00	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.15	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.15	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	3	20	$0.52	100%	N/A	$0.01	0.00	0.00

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Washington	Small Office	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.93	100%	N/A	$0.02	0.11	0.11
Washington	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	382	15	$693	100%	N/A	$0.21	0.00	0.00
Washington	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,182	15	$1,387	100%	N/A	$0.14	90	104
Washington	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	517	15	$778	35%	98%	$0.18	40	40
Washington	Small Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	277	18	$534	45%	65%	$0.20	18	18
Washington	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	887	14	$3,827	5.0%	94%	$0.52	9	9
Washington	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	517	40	$22,539	2.0%	**%	$3.85	0.00	0.00
Washington	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,568	30	$41,136	5.0%	N/A	$1.47	11	14
Washington	Small Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	832	12	$72	40%	39%	$0.01	28	28
Washington	Small Office	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	975	25	$1,735	45%	69%	$0.18	66	66
Washington	Small Office	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	148	25	$600	25%	85%	$0.40	6	6
Washington	Small Office	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	466	20	$430	45%	60%	$0.09	27	27
Washington	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,524	25	$2,091	15%	84%	$0.14	40	40
Washington	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	297	25	$645	15%	90%	$0.21	8	8
Washington	Small Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$537	10%	85%	.	0.00	0.00
Washington	Small Office	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,141	10%	75%	.	0.00	0.00
Washington	Small Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,386	7	$438	90%	85%	$0.06	221	221
Washington	Small Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	380	10	$637	35%	66%	$0.24	16	16
Washington	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,399	25	$6	15%	90%	$0.00	35	35
Washington	Small Office	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,276	25	$101	15%	72%	$0.01	25	25
Washington	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	214	15	$555	100%	N/A	$0.30	0.00	0.00
Washington	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	604	15	$1,110	100%	N/A	$0.21	2	2
Washington	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	261	15	$778	35%	98%	$0.35	0.71	0.71
Washington	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	447	14	$3,827	5.0%	94%	$1.03	0.16	0.16

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Washington	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	261	40	$22,539	2.0%	**%	$7.64	0.00	0.00
Washington	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	1,472	30	$21,131	5.0%	N/A	$1.30	0.35	0.35
Washington	Small Office	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	75	25	$600	75%	85%	$0.79	0.28	0.28
Washington	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	149	25	$645	35%	90%	$0.43	0.27	0.27
Washington	Small Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	559	15	$2,225	10%	75%	$0.46	0.32	0.32
Washington	Small Office	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,133	30	$1,133	35%	95%	$0.09	2	2
Washington	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	705	25	$6	80%	90%	$0.00	3	3
Washington	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	208	8	$57	5.0%	95%	$0.05	22	22
Washington	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	617	8	$320	75%	70%	$0.09	739	739
Washington	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	512	15	$692	62%	90%	$0.16	652	652
Washington	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	219	8	$407	90%	53%	$0.31	185	185
Washington	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	2	13	$4	75%	95%	$0.19	4	4
Washington	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,026	17	$1,377	5.0%	95%	$0.07	219	219
Washington	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	208	8	$57	5.0%	95%	$0.05	0.78	0.78
Washington	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	617	8	$320	75%	70%	$0.09	25	25
Washington	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	512	15	$692	62%	90%	$0.16	22	22
Washington	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	219	8	$407	90%	53%	$0.31	6	6
Washington	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	2	13	$4	75%	95%	$0.19	0.14	0.14
Washington	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,026	17	$1,377	5.0%	95%	$0.07	6	6
Washington	Small Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	143	10	$185	0.5%	95%	$0.19	1	1
Washington	Small Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,641	8	$2,225	30%	78%	$0.23	729	729
Washington	Small Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,231	8	$1,668	30%	78%	$0.23	0.00	0.00
Washington	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	270	13	$132	100%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

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Washington	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	352	13	$645	100%	N/A	$0.23	443	466
Washington	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	805	13	$5,273	25%	N/A	$0.86	337	355
Washington	Small Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	552	8	$407	75%	53%	$0.12	391	391
Washington	Small Office	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	537	8	$43	10%	88%	$0.01	82	82
Washington	Small Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	51	15	$31	100%	N/A	$0.60	0.00	0.00
Washington	Small Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	63	15	$129	95%	N/A	$-0.59	50	51
Washington	Small Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	56	25	$940	50%	N/A	$-0.48	1	1
Washington	Small Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	35	17	$0.60	25%	N/A	$-1.18	0.00	0.00
Washington	Small Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	17	15	$596	100%	N/A	$-2.85	0.00	0.00
Washington	Small Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	20	8	$407	75%	53%	$3.34	17	17
Washington	Small Office	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	20	8	$43	10%	88%	$0.36	3	3
Washington	Small Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	52	11	$20	95%	50%	$0.05	56	56
Washington	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	10	13	$8	95%	98%	$0.11	22	22
Washington	Small Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	122	10	$185	0.5%	95%	$0.22	0.04	0.04
Washington	Small Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,222	8	$2,225	30%	78%	$0.31	20	20
Washington	Small Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	917	8	$1,668	30%	78%	$0.31	0.00	0.00
Washington	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	10	13	$8	95%	98%	$0.11	0.69	0.69
Washington	Small Office	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	549	13	$792	100%	N/A	$0.18	37	37
Washington	Small Office	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	1,236	30	$1,236	35%	95%	$0.09	20	20
Washington	Small Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	470	8	$407	75%	53%	$0.15	11	11

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Washington	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,563	4	$23	85%	N/A	$-0.03	0.00	256
Washington	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,368	1	$15	100%	N/A	$0.01	0.00	0.00
Washington	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	370	1	$11	100%	N/A	$-0.03	0.00	0.00
Washington	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,576	12	$288	15%	N/A	$0.00	32	234
Washington	Small Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	85	8	$407	75%	53%	$0.81	26	26
Washington	Small Office	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	83	8	$43	10%	88%	$0.09	5	5
Washington	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.93	10%	90%	$0.05	0.71	0.71
Washington	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	12	4	$0.00	75%	45%	$0.00	10	10
Washington	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	132	10	$0.65	95%	75%	$0.00	215	215
Washington	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	11	4	$0.33	5.0%	86%	$0.01	1	1
Washington	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	445	4	$89	60%	90%	$0.06	547	547
Washington	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.93	10%	90%	$0.05	0.02	0.02
Washington	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	12	4	$0.00	75%	45%	$0.00	0.34	0.34
Washington	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	132	10	$0.65	95%	75%	$0.00	7	7
Washington	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	11	4	$0.33	5.0%	86%	$0.01	0.04	0.04
Washington	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	445	4	$89	60%	90%	$0.06	18	18
Washington	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	26	6	$28	100%	N/A	$0.23	1	1
Washington	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	26	6	$28	100%	N/A	$0.23	0.09	0.09
Washington	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	121	6	$14	100%	N/A	$0.02	24	24
Washington	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	121	6	$14	100%	N/A	$0.02	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	10	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	18	20	$7	100%	N/A	$0.04	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$100	100%	N/A	$0.39	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	32	20	$135	100%	N/A	$0.42	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	36	20	$20	100%	N/A	$0.06	15	17

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Washington	Small Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	154	20	$27	8.8%	100%	$0.02	26	26
Washington	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	10	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	18	20	$7	100%	N/A	$0.04	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$100	100%	N/A	$0.39	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	32	20	$135	100%	N/A	$0.42	0.00	0.00
Washington	Small Office	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	36	20	$20	100%	N/A	$0.06	1	1
Washington	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	50	9	$6	100%	N/A	$0.02	92	95
Washington	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	172	4	$645	10%	50%	$1.06	15	15
Washington	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	50	9	$6	100%	N/A	$0.02	3	3
Washington	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	171	4	$645	10%	50%	$1.07	0.52	0.52
Washington	Small Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	284	18	$534	45%	65%	$0.15	46	46
Washington	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,708	14	$3,827	5.0%	94%	$0.27	44	44
Washington	Small Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,139	12	$72	40%	39%	$0.01	96	96
Washington	Small Office	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,866	25	$1,735	45%	69%	$0.09	309	309
Washington	Small Office	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	262	25	$600	25%	85%	$0.23	28	28
Washington	Small Office	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	478	20	$430	45%	60%	$0.07	65	65
Washington	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,739	25	$2,091	15%	84%	$0.08	172	172
Washington	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	509	25	$645	15%	90%	$0.13	33	33
Washington	Small Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$537	10%	85%	.	0.00	0.00
Washington	Small Office	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,141	10%	75%	.	0.00	0.00
Washington	Small Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,424	7	$438	90%	85%	$0.04	527	527
Washington	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,437	25	$6	15%	90%	$0.00	84	84
Washington	Small Office	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,311	25	$101	15%	72%	$0.01	61	61
Washington	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	817	14	$3,827	5.0%	94%	$0.57	0.72	0.72
Washington	Small Office	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	125	25	$600	75%	85%	$0.47	1	1
Washington	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	243	25	$645	35%	90%	$0.26	1	1
Washington	Small Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	545	15	$2,225	10%	75%	$0.33	0.73	0.73
Washington	Small Office	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,104	30	$1,104	35%	95%	$0.07	4	4
Washington	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	687	25	$6	80%	90%	$0.00	7	7

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Washington	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	78	10	$10	100%	N/A	$0.02	84	84
Washington	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	78	10	$10	100%	N/A	$0.02	3	3
Washington	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	47	15	$14	95%	76%	$0.04	77	77
Washington	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,185	20	$247	55%	45%	$0.02	664	664
Washington	Small Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	39	7	$11	65%	25%	$0.05	0.00	0.00
Washington	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	41	15	$14	95%	76%	$0.04	2	2
Washington	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,038	20	$247	55%	45%	$0.02	14	14
Washington	Small Office	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	824	30	$824	35%	95%	$0.09	14	14
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	590	15	$144	75%	N/A	$0.05	0.00	0.00
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	594	15	$241	75%	N/A	$0.06	0.00	0.00
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	608	15	$417	75%	N/A	$0.10	0.29	0.30
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	614	15	$346	75%	N/A	$0.08	1	1
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	590	15	$144	75%	N/A	$0.05	0.00	0.00
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	594	15	$241	75%	N/A	$0.06	0.00	0.00
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	608	15	$417	75%	N/A	$0.10	0.01	0.01
Washington	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	614	15	$346	75%	N/A	$0.08	0.06	0.06
Washington	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	23	10	$618	55%	80%	$3.87	1	1
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	2	12	$8	90%	35%	$0.41	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$2	90%	35%	$0.42	0.03	0.03
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	4	12	$14	90%	55%	$0.40	0.00	0.01
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$9	90%	55%	$0.40	0.17	0.17
Washington	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	92	25	$800	2.5%	100%	$0.86	0.27	0.27
Washington	Small Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	4	12	$25	80%	30%	$0.73	0.12	0.12
Washington	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	7	9	$6	95%	25%	$0.10	0.21	0.21
Washington	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	11	10	$87	75%	85%	$1.06	0.88	0.88
Washington	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	23	10	$618	55%	80%	$3.87	0.04	0.04
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	2	12	$8	90%	35%	$0.41	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$2	90%	35%	$0.42	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	4	12	$14	90%	55%	$0.40	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$9	90%	55%	$0.40	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	92	25	$640	2.5%	100%	$0.68	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	7	9	$0.04	95%	25%	$-0.03	0.00	0.00
Washington	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	11	10	$87	75%	85%	$1.06	0.03	0.03
Washington	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	360	15	$852	75%	N/A	$0.33	89	91
Washington	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	561	15	$1,296	75%	N/A	$0.30	424	432
Washington	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	13	15	$54	100%	N/A	$0.46	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Office	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	13	15	$54	100%	N/A	$0.46	0.00	0.00
Washington	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	360	15	$852	75%	N/A	$0.33	4	4
Washington	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	561	15	$1,296	75%	N/A	$0.30	19	19
Washington	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	13	15	$54	100%	N/A	$0.46	0.00	0.00
Washington	Small Office	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	13	15	$54	100%	N/A	$0.46	0.00	0.00
Washington	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	49	10	$618	25%	94%	$1.81	10	10
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	2	12	$8	75%	35%	$0.41	0.00	0.05
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$2	75%	35%	$0.42	0.20	0.24
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	4	12	$14	75%	55%	$0.40	0.00	0.13
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$9	75%	55%	$0.40	1	1
Washington	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	198	25	$800	2.5%	100%	$0.40	4	4
Washington	Small Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	9	12	$25	80%	30%	$0.34	2	2
Washington	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	15	9	$6	95%	25%	$0.03	3	3
Washington	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	24	10	$87	75%	85%	$0.48	14	14
Washington	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	49	10	$618	25%	94%	$1.81	0.28	0.28
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	2	12	$8	75%	35%	$0.41	0.00	0.00
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$2	75%	35%	$0.42	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	4	12	$14	75%	55%	$0.40	0.00	0.00
Washington	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$9	75%	55%	$0.40	0.02	0.02
Washington	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	198	25	$640	2.5%	100%	$0.32	0.03	0.03
Washington	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	15	9	$0.04	95%	25%	$-0.03	0.09	0.09
Washington	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	24	10	$87	75%	85%	$0.48	0.38	0.38
Washington	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	99	4	$11	100%	N/A	$0.03	8	8
Washington	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	99	4	$11	100%	N/A	$0.03	0.15	0.15
Washington	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	194	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	496	15	$408	100%	N/A	$0.10	0.00	0.00
Washington	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,111	15	$-8552.4474	34%	N/A	$-0.32	14	19
Washington	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	140	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	360	15	$326	100%	N/A	$0.11	0.00	0.00
Washington	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,980	15	$-6235.1107	34%	N/A	$-0.33	0.53	0.55
Washington	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	681	15	$1,050	80%	98%	$0.18	68	68
Washington	Small Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,021	10	$2,551	10%	80%	$0.36	9	9
Washington	Small Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	681	5	$720	95%	72%	$0.25	54	54
Washington	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,702	15	$6,250	50%	94%	$0.43	87	87
Washington	Small Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	170	18	$720	45%	65%	$0.30	4	4
Washington	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	681	40	$30,390	2.0%	**%	$3.95	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	340	12	$83	10%	39%	$0.02	1	1
Washington	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	31	25	$2,340	45%	62%	$0.29	0.82	0.82

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Washington	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$810	25%	85%	.	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	286	20	$580	45%	59%	$0.14	7	7
Washington	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,820	15%	84%	.	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$870	15%	90%	.	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	74%	.	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	851	7	$591	90%	85%	$0.09	61	61
Washington	Small Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	478	10	$740	35%	66%	$0.22	9	9
Washington	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	859	25	$7	15%	90%	$0.00	9	9
Washington	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	783	25	$117	15%	69%	$0.01	6	6
Washington	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	457	15	$1,050	80%	98%	$0.27	1	1
Washington	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,143	15	$6,250	50%	94%	$0.64	2	2
Washington	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	457	40	$30,390	2.0%	**%	$5.88	0.00	0.00
Washington	Small Retail	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	457	15	$3,000	10%	75%	$0.54	0.12	0.12
Washington	Small Retail	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	667	30	$667	12%	98%	$0.07	0.21	0.21
Washington	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	576	25	$7	80%	90%	$0.00	1	1
Washington	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	11	6	$0.24	100%	N/A	$0.00	5	5
Washington	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	11	6	$0.24	100%	N/A	$0.00	0.18	0.18
Washington	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	13	4	$15	100%	N/A	$0.32	0.34	0.34
Washington	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	13	4	$15	100%	N/A	$0.32	0.08	0.08
Washington	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.03	100%	N/A	$0.00	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	0.97	20	$0.07	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.07	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.45	100%	N/A	$0.02	0.16	0.18
Washington	Small Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	6	20	$1	8.8%	100%	$0.02	0.23	0.23
Washington	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.03	100%	N/A	$0.00	0.00	0.00

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Washington	Small Retail	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	0.97	20	$0.07	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.07	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.25	100%	N/A	$0.01	0.00	0.00
Washington	Small Retail	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.45	100%	N/A	$0.02	0.01	0.01
Washington	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	503	15	$1,520	100%	N/A	$0.35	0.00	0.00
Washington	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,388	15	$3,040	100%	N/A	$0.25	7	8
Washington	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	819	15	$1,050	80%	98%	$0.15	5	5
Washington	Small Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	363	18	$720	45%	65%	$0.21	0.88	0.88
Washington	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	948	14	$5,160	5.0%	94%	$0.66	0.36	0.36
Washington	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	819	40	$30,390	2.0%	**%	$3.28	0.00	0.00
Washington	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,483	30	$90,131	5.0%	N/A	$2.37	0.66	0.82
Washington	Small Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,089	12	$83	10%	39%	$0.01	0.34	0.34
Washington	Small Retail	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,487	25	$2,340	45%	62%	$0.16	3	3
Washington	Small Retail	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	159	25	$810	25%	85%	$0.50	0.26	0.26
Washington	Small Retail	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	609	20	$580	45%	59%	$0.10	1	1
Washington	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,520	25	$2,820	15%	84%	$0.18	1	1
Washington	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	297	25	$870	15%	90%	$0.29	0.31	0.31
Washington	Small Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Small Retail	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	74%	.	0.00	0.00
Washington	Small Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,815	7	$591	90%	85%	$0.06	10	10
Washington	Small Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	478	10	$740	35%	66%	$0.22	0.77	0.77
Washington	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,832	25	$7	15%	90%	$0.00	1	1
Washington	Small Retail	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,671	25	$117	15%	69%	$0.01	1	1
Washington	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	336	15	$1,216	100%	N/A	$0.42	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	890	15	$2,432	100%	N/A	$0.32	0.23	0.23
Washington	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	495	15	$1,050	80%	98%	$0.25	0.11	0.11
Washington	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	572	14	$5,160	5.0%	94%	$1.09	0.00	0.00
Washington	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	495	40	$30,390	2.0%	**%	$5.43	0.00	0.00
Washington	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,347	30	$46,298	5.0%	N/A	$1.79	0.02	0.02
Washington	Small Retail	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	96	25	$810	75%	85%	$0.83	0.01	0.01
Washington	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	179	25	$870	35%	90%	$0.48	0.01	0.01
Washington	Small Retail	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	877	15	$3,000	10%	75%	$0.40	0.01	0.01
Washington	Small Retail	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,281	30	$1,281	12%	98%	$0.09	0.03	0.03
Washington	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,106	25	$7	80%	90%	$0.00	0.19	0.19
Washington	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	7	7
Washington	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	721	8	$372	75%	70%	$0.09	204	204
Washington	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	599	15	$809	62%	90%	$0.16	181	181
Washington	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$548	45%	55%	$0.31	31	31
Washington	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	40	13	$60	75%	95%	$0.19	15	15
Washington	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	70	70
Washington	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.25	0.25
Washington	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	721	8	$372	75%	70%	$0.09	7	7
Washington	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	599	15	$809	62%	90%	$0.16	6	6
Washington	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$548	45%	55%	$0.31	1	1
Washington	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	40	13	$60	75%	95%	$0.19	0.52	0.52
Washington	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	2	2
Washington	Small Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	322	10	$249	0.5%	95%	$0.11	0.67	0.67
Washington	Small Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,410	8	$3,000	30%	84%	$0.15	379	379

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,558	8	$2,250	30%	84%	$0.15	0.00	0.00
Washington	Small Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	423	6	$157	2.5%	80%	$0.05	3	3
Washington	Small Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	317	6	$161	2.5%	80%	$0.09	2	2
Washington	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,130	13	$1,192	100%	N/A	$0.13	338	351
Washington	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	847	13	$417	100%	N/A	$0.04	0.00	0.00
Washington	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,967	13	$10,458	25%	N/A	$0.69	188	195
Washington	Small Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,465	8	$548	5.0%	55%	$0.06	16	16
Washington	Small Retail	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	1,207	8	$68	10%	86%	$0.01	43	43
Washington	Small Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	507	15	$195	100%	N/A	$0.12	0.00	0.00
Washington	Small Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	624	15	$822	95%	N/A	$0.03	120	121
Washington	Small Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	557	16	$5,981	50%	N/A	$0.90	4	4
Washington	Small Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	354	11	$1	25%	N/A	$-0.17	0.00	0.00
Washington	Small Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	176	15	$3,789	100%	N/A	$1.53	0.00	0.00
Washington	Small Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	235	8	$548	5.0%	55%	$0.39	3	3
Washington	Small Retail	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	194	8	$68	10%	86%	$0.06	8	8
Washington	Small Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	395	11	$154	95%	50%	$0.05	101	101
Washington	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	79	13	$67	95%	98%	$0.11	39	39
Washington	Small Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	372	10	$249	0.5%	95%	$0.10	0.02	0.02
Washington	Small Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,751	8	$3,000	30%	84%	$0.18	11	11
Washington	Small Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,063	8	$2,250	30%	84%	$0.18	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	327	6	$80	2.5%	80%	$0.01	0.10	0.10
Washington	Small Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	180	6	$70	2.5%	80%	$0.06	0.05	0.05
Washington	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	79	13	$67	95%	98%	$0.11	1	1
Washington	Small Retail	Lighting Interior Other	Lighting Package, High Efficiency	12% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,237	13	$6,218	100%	N/A	$0.35	39	39
Washington	Small Retail	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	2,723	30	$2,723	12%	98%	$0.09	3	3
Washington	Small Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,696	8	$548	5.0%	55%	$0.05	0.72	0.72
Washington	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,177	4	$68	85%	N/A	$-0.01	0.00	274
Washington	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,280	1	$45	100%	N/A	$0.00	0.00	0.00
Washington	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,700	1	$35	100%	N/A	$-0.01	0.00	0.00
Washington	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,237	12	$854	15%	N/A	$0.01	37	255
Washington	Small Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	461	8	$548	5.0%	55%	$0.20	2	2
Washington	Small Retail	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	379	8	$68	10%	86%	$0.03	6	6
Washington	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.77	10%	90%	$0.05	0.13	0.13
Washington	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	17	4	$0.00	10%	45%	$0.00	0.42	0.42
Washington	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	11	11
Washington	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	9	4	$0.45	5.0%	86%	$0.01	0.22	0.22
Washington	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	17	17
Washington	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.77	10%	90%	$0.05	0.00	0.00
Washington	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	17	4	$0.00	10%	45%	$0.00	0.01	0.01
Washington	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	0.40	0.40
Washington	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	9	4	$0.45	5.0%	86%	$0.01	0.00	0.00
Washington	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	0.60	0.60

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Washington	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	35	6	$38	100%	N/A	$0.23	0.55	0.55
Washington	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	35	6	$38	100%	N/A	$0.23	0.02	0.02
Washington	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	38	6	$4	100%	N/A	$0.02	1	1
Washington	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	38	6	$4	100%	N/A	$0.02	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	5	20	$1	100%	N/A	$0.04	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	8	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	12	20	$48	100%	N/A	$0.39	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	15	20	$65	100%	N/A	$0.42	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	17	20	$9	100%	N/A	$0.06	1	1
Washington	Small Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	74	20	$13	8.8%	100%	$0.02	3	3
Washington	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	5	20	$1	100%	N/A	$0.04	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	8	20	$3	100%	N/A	$0.04	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	12	20	$48	100%	N/A	$0.39	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	15	20	$65	100%	N/A	$0.42	0.00	0.00
Washington	Small Retail	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	17	20	$9	100%	N/A	$0.06	0.14	0.14
Washington	Small Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	269	18	$720	45%	65%	$0.22	10	10
Washington	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,615	14	$5,160	5.0%	94%	$0.39	9	9
Washington	Small Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,077	12	$83	10%	39%	$0.01	5	5
Washington	Small Retail	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,499	25	$2,340	45%	62%	$0.09	87	87
Washington	Small Retail	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	248	25	$810	25%	85%	$0.32	6	6
Washington	Small Retail	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	452	20	$580	45%	59%	$0.10	13	13
Washington	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,589	25	$2,820	15%	84%	$0.11	37	37
Washington	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	482	25	$870	15%	90%	$0.18	7	7
Washington	Small Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$724	10%	85%	.	0.00	0.00
Washington	Small Retail	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$6,932	10%	74%	.	0.00	0.00
Washington	Small Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,346	7	$591	90%	85%	$0.06	113	113
Washington	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,358	25	$7	15%	90%	$0.00	18	18
Washington	Small Retail	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,239	25	$117	15%	69%	$0.01	12	12
Washington	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	909	14	$5,160	5.0%	94%	$0.69	0.18	0.18
Washington	Small Retail	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	139	25	$810	75%	85%	$0.57	0.28	0.28

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Washington	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	271	25	$870	35%	90%	$0.32	0.26	0.26
Washington	Small Retail	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	606	15	$3,000	10%	75%	$0.43	0.18	0.18
Washington	Small Retail	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	885	30	$885	12%	98%	$0.07	0.31	0.31
Washington	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	764	25	$7	80%	90%	$0.00	1	1
Washington	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	88	10	$12	100%	N/A	$0.02	22	22
Washington	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	88	10	$12	100%	N/A	$0.02	0.86	0.86
Washington	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	90	15	$19	95%	76%	$0.03	35	35
Washington	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,256	20	$334	55%	45%	$0.02	300	300
Washington	Small Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
Washington	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	74	15	$19	95%	76%	$0.03	1	1
Washington	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,858	20	$334	55%	45%	$0.02	6	6
Washington	Small Retail	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,064	30	$1,064	12%	98%	$0.09	1	1
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	513	15	$144	75%	N/A	$0.05	0.00	0.00
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	516	15	$241	75%	N/A	$0.07	0.00	0.00
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	528	15	$417	75%	N/A	$0.11	0.05	0.06
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	534	15	$346	75%	N/A	$0.09	0.26	0.27
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	495	15	$144	75%	N/A	$0.05	0.00	0.00
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	498	15	$241	75%	N/A	$0.08	0.00	0.00
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	510	15	$417	75%	N/A	$0.11	0.00	0.00
Washington	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	515	15	$346	75%	N/A	$0.10	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$-0.23	0.21	0.21
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$1	5.0%	94%	$-0.51	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	3	14	$3	5.0%	97%	$-0.26	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	4	14	$8	5.0%	99%	$-0.10	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	1	14	$4	5.0%	99%	$-0.72	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	0.90	14	$2	5.0%	99%	$-1.22	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	20	10	$833	75%	94%	$6.01	0.39	0.39
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	10%	35%	$0.41	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	10%	35%	$0.42	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	10%	55%	$0.40	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	10%	55%	$0.40	0.01	0.01
Washington	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	80	25	$800	2.5%	100%	$0.98	0.05	0.05
Washington	Small Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	4	12	$25	80%	90%	$0.84	0.07	0.07
Washington	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	6	9	$8	95%	25%	$0.16	0.04	0.04
Washington	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	10	10	$117	75%	95%	$1.67	0.20	0.20
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$-0.23	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	2	14	$1	5.0%	94%	$-0.51	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	3	14	$3	5.0%	97%	$-0.26	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	4	14	$8	5.0%	99%	$-0.10	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	1	14	$4	5.0%	99%	$-0.72	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	0.90	14	$2	5.0%	99%	$-1.22	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	19	10	$833	75%	94%	$6.22	0.01	0.01
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	8	12	$25	10%	35%	$0.41	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	10%	35%	$0.42	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	10%	55%	$0.40	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	9	12	$27	10%	55%	$0.40	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	77	25	$640	2.5%	100%	$0.82	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	6	9	$0.06	95%	25%	$-0.05	0.00	0.00
Washington	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	9	10	$117	75%	95%	$1.73	0.00	0.00
Washington	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	312	15	$852	75%	N/A	$0.38	18	18
Washington	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	487	15	$1,296	75%	N/A	$0.35	86	88
Washington	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12	15	$54	100%	N/A	$0.53	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12	15	$54	100%	N/A	$0.53	0.00	0.00
Washington	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	302	15	$852	75%	N/A	$0.39	0.80	0.80
Washington	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	471	15	$1,296	75%	N/A	$0.36	3	3
Washington	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	11	15	$54	100%	N/A	$0.54	0.00	0.00
Washington	Small Retail	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	11	15	$54	100%	N/A	$0.54	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$-0.23	1	1
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$1	5.0%	94%	$-0.51	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	3	14	$3	5.0%	97%	$-0.26	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	Existing	4	14	$8	5.0%	99%	$-0.10	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	Existing	1	14	$4	5.0%	99%	$-0.72	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	Existing	0.90	14	$2	5.0%	99%	$-1.22	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	43	10	$833	25%	94%	$2.81	2	2
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	8	12	$25	75%	35%	$0.41	0.00	0.03
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	35%	$0.42	0.14	0.17
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	14	12	$44	75%	55%	$0.40	0.00	0.09

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	9	12	$27	75%	55%	$0.40	0.75	0.90
Washington	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	172	25	$800	2.5%	100%	$0.46	0.88	0.88
Washington	Small Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	8	12	$25	80%	90%	$0.39	1	1
Washington	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	13	9	$8	95%	25%	$0.05	0.68	0.68
Washington	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	21	10	$117	75%	95%	$0.75	3	3
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$-0.23	0.04	0.04
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	2	14	$1	5.0%	94%	$-0.51	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	3	14	$3	5.0%	97%	$-0.26	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Per Building	New	4	14	$8	5.0%	99%	$-0.10	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2016 Clothes Washer - MEF 2.29 and WF 4.5 (Electric DHW & Dryer)	Per Building	New	1	14	$4	5.0%	99%	$-0.72	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2018 Clothes Washer - MEF 2.36 and WF 4.1 (Electric DHW & Dryer)	Per Building	New	0.90	14	$2	5.0%	99%	$-1.22	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	41	10	$833	25%	94%	$2.91	0.05	0.05
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	8	12	$25	75%	35%	$0.41	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	35%	$0.42	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	14	12	$44	75%	55%	$0.40	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	9	12	$27	75%	55%	$0.40	0.02	0.02

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	166	25	$640	2.5%	100%	$0.38	0.00	0.00
Washington	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	13	9	$0.06	95%	25%	$-0.04	0.01	0.01
Washington	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	20	10	$117	75%	95%	$0.79	0.08	0.08
Washington	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	415	4	$47	100%	N/A	$0.03	17	17
Washington	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	415	4	$47	100%	N/A	$0.03	0.31	0.31
Washington	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	39	5	$1,703	95%	81%	$10.16	0.24	0.24
Washington	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	240	10	$5,898	25%	70%	$3.56	0.34	0.34
Washington	Warehouse	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	158	15	$13,694	45%	90%	$10.04	0.51	0.51
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	666	20	$4,392	100%	N/A	$0.67	2	3
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	222	20	$1,464	100%	N/A	$0.67	0.00	0.00
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	495	20	$3,266	100%	N/A	$0.67	0.00	0.00
Washington	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	317	15	$3,500	80%	98%	$1.28	1	1
Washington	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	254	7	$729	10%	94%	$0.53	0.17	0.17
Washington	Warehouse	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	444	15	$65	65%	35%	$0.02	0.72	0.72
Washington	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	127	13	$527	75%	65%	$0.52	0.43	0.43
Washington	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	317	15	$1,750	75%	76%	$0.64	1	1
Washington	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	317	40	$1,300	2.0%	**%	$28.21	0.00	0.00
Washington	Warehouse	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	158	12	$70	10%	39%	$0.06	0.03	0.03
Washington	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	14	25	$7,800	45%	61%	$53.38	0.02	0.02
Washington	Warehouse	Cooling Chillers	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$2,700	25%	85%	.	0.00	0.00
Washington	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	81%	.	0.00	0.00
Washington	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Washington	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Washington	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	66%	.	0.00	0.00
Washington	Warehouse	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WA State Code)	No Insulation	Per Building	Existing	47	15	$205	65%	45%	$0.50	0.08	0.08

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Warehouse	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	396	7	$1,971	90%	85%	$0.92	1	1
Washington	Warehouse	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	126	10	$621	35%	66%	$0.71	0.16	0.16
Washington	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	400	25	$6	15%	90%	$0.00	0.30	0.30
Washington	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	365	25	$98	15%	70%	$0.03	0.21	0.21
Washington	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	27	5	$1,703	95%	81%	$14.59	0.00	0.00
Washington	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	167	10	$5,308	25%	70%	$4.60	0.00	0.00
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	560	20	$3,953	100%	N/A	$0.72	0.12	0.13
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	186	20	$1,317	100%	N/A	$0.72	0.00	0.00
Washington	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	416	20	$2,939	100%	N/A	$0.72	0.00	0.00
Washington	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	221	15	$3,500	80%	98%	$1.84	0.04	0.04
Washington	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	177	7	$656	10%	94%	$0.69	0.00	0.00
Washington	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	88	13	$475	75%	65%	$0.68	0.01	0.01
Washington	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	221	15	$1,750	75%	76%	$0.92	0.03	0.03
Washington	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	221	40	$1,300	2.0%	**%	$40.49	0.00	0.00
Washington	Warehouse	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	221	15	$10,000	10%	75%	$5.26	0.00	0.00
Washington	Warehouse	Cooling Chillers	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	900	30	$900	5.0%	100%	$0.09	0.00	0.00
Washington	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	279	25	$6	80%	90%	$0.00	0.04	0.04
Washington	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	104	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	266	15	$680	100%	N/A	$0.30	2	2
Washington	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	2,210	15	$-14254.079	10%	N/A	$-0.98	1	1
Washington	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	88	15	$0.00	100%	N/A	$0.00	0.00	0.00
Washington	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	226	15	$544	100%	N/A	$0.28	0.08	0.09
Washington	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	1,876	15	$-10391.851	10%	N/A	$-0.87	0.05	0.05

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	415	15	$3,500	80%	98%	$0.98	18	18
Washington	Warehouse	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	623	10	$4,252	10%	40%	$0.99	1	1
Washington	Warehouse	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	415	5	$1,200	95%	72%	$0.68	14	14
Washington	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,039	15	$20,833	50%	94%	$2.33	23	23
Washington	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	415	15	$1,750	75%	76%	$0.49	10	10
Washington	Warehouse	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	103	18	$2,400	45%	65%	$2.46	1	1
Washington	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	415	40	$1,300	2.0%	**%	$21.54	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	207	12	$70	10%	39%	$0.04	0.32	0.32
Washington	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	18	25	$7,800	45%	61%	$40.76	0.20	0.20
Washington	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	0.00	25	$2,700	25%	85%	.	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	174	20	$1,934	45%	58%	$1.12	1	1
Washington	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	81%	.	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	66%	.	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	519	7	$1,971	90%	85%	$0.71	15	15
Washington	Warehouse	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	126	10	$621	35%	66%	$0.71	1	1
Washington	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	524	25	$6	15%	90%	$0.00	2	2
Washington	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	478	25	$98	15%	70%	$0.02	1	1
Washington	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	323	15	$3,500	80%	98%	$1.26	0.50	0.50
Washington	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	809	15	$20,833	50%	94%	$3.00	0.69	0.69
Washington	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	323	15	$1,750	75%	76%	$0.63	0.30	0.30
Washington	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	323	40	$1,300	2.0%	**%	$27.66	0.00	0.00
Washington	Warehouse	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	323	15	$10,000	10%	75%	$3.60	0.03	0.03
Washington	Warehouse	Cooling Dx Evap	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	1,317	30	$1,317	5.0%	100%	$0.09	0.07	0.07
Washington	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	408	25	$6	80%	90%	$0.00	0.39	0.39
Washington	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	40	6	$0.88	100%	N/A	$0.00	9	9
Washington	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	40	6	$0.88	100%	N/A	$0.00	0.32	0.32
Washington	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	56	4	$63	100%	N/A	$0.32	0.71	0.71

Table C-2.2. Commercial Measure Details

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Washington	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	56	4	$63	100%	N/A	$0.32	0.16	0.16
Washington	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.22	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.22	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	5	20	$0.75	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$1	100%	N/A	$0.02	0.23	0.26
Washington	Warehouse	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	18	20	$4	8.8%	100%	$0.02	0.34	0.34
Washington	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Market Standard	RTF Market Standard Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.22	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.22	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	5	20	$0.75	100%	N/A	$0.01	0.00	0.00
Washington	Warehouse	Freezers	Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	Federal Standard 2001 Freezer	Per Building	New	6	20	$1	100%	N/A	$0.02	0.01	0.01
Washington	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	343	15	$2,533	100%	N/A	$0.86	0.00	0.00
Washington	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,067	15	$5,067	100%	N/A	$0.55	6	7
Washington	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	409	15	$3,500	80%	98%	$1.00	3	3
Washington	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,047	15	$1,750	75%	76%	$0.19	5	5
Washington	Warehouse	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	261	18	$2,400	45%	65%	$0.98	0.67	0.67
Washington	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	956	14	$9,070	5.0%	94%	$1.15	0.39	0.39
Washington	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	409	40	$1,300	2.0%	**%	$21.87	0.00	0.00
Washington	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,305	30	$50,218	5.0%	N/A	$5.98	0.44	0.59
Washington	Warehouse	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	785	12	$70	10%	39%	$0.01	0.26	0.26
Washington	Warehouse	Heat Pump	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,480	25	$7,800	45%	61%	$0.52	3	3

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Washington	Warehouse	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	160	25	$2,700	25%	85%	$1.66	0.28	0.28
Washington	Warehouse	Heat Pump	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	439	20	$1,934	45%	58%	$0.45	0.95	0.95
Washington	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,358	25	$9,400	15%	81%	$0.39	2	2
Washington	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	331	25	$2,900	15%	90%	$0.87	0.35	0.35
Washington	Warehouse	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Washington	Warehouse	Heat Pump	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	66%	.	0.00	0.00
Washington	Warehouse	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,309	7	$1,971	90%	85%	$0.28	7	7
Washington	Warehouse	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	126	10	$621	35%	66%	$0.71	0.20	0.20
Washington	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	1,321	25	$6	15%	90%	$0.00	1	1
Washington	Warehouse	Heat Pump	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,205	25	$98	15%	70%	$0.01	0.89	0.89
Washington	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	318	15	$2,027	100%	N/A	$0.74	0.00	0.00
Washington	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,034	15	$4,054	100%	N/A	$0.46	0.28	0.29
Washington	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	356	15	$3,500	80%	98%	$1.14	0.09	0.09
Washington	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	912	15	$1,750	75%	76%	$0.22	0.17	0.17
Washington	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	833	14	$9,070	5.0%	94%	$1.32	0.01	0.01
Washington	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	356	40	$1,300	2.0%	**%	$25.11	0.00	0.00
Washington	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,113	30	$77,164	5.0%	N/A	$3.31	0.02	0.02
Washington	Warehouse	Heat Pump	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	139	25	$2,700	75%	85%	$1.91	0.02	0.02
Washington	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	289	25	$2,900	35%	90%	$0.99	0.02	0.02
Washington	Warehouse	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	912	15	$10,000	10%	75%	$1.28	0.02	0.02
Washington	Warehouse	Heat Pump	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	3,712	30	$3,712	5.0%	100%	$0.09	0.04	0.04
Washington	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	1,151	25	$6	80%	90%	$0.00	0.21	0.21
Washington	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	936	8	$260	5.0%	95%	$0.05	11	11
Washington	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	606	8	$680	75%	70%	$0.19	82	82
Washington	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	504	15	$681	62%	90%	$0.16	73	73
Washington	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$1,829	90%	50%	$1.02	27	27

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$58	75%	95%	$0.19	7	7
Washington	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	9,110	17	$6,190	5.0%	95%	$0.07	113	113
Washington	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	936	8	$260	5.0%	95%	$0.05	0.40	0.40
Washington	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	606	8	$680	75%	70%	$0.19	2	2
Washington	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	504	15	$681	62%	90%	$0.16	2	2
Washington	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$1,829	90%	50%	$1.02	0.95	0.95
Washington	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$58	75%	95%	$0.19	0.24	0.24
Washington	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	9,110	17	$6,190	5.0%	95%	$0.07	3	3
Washington	Warehouse	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	229	10	$832	0.5%	95%	$0.53	0.23	0.23
Washington	Warehouse	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,282	8	$8,000	10%	98%	$1.05	27	27
Washington	Warehouse	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	962	8	$6,000	10%	98%	$1.05	20	20
Washington	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	697	13	$945	100%	N/A	$0.17	101	104
Washington	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	657	13	$180	100%	N/A	$0.02	0.00	0.00
Washington	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,319	13	$11,571	25%	N/A	$1.13	61	63
Washington	Warehouse	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,242	8	$1,829	75%	50%	$0.25	98	98
Washington	Warehouse	Lighting Interior Fluorescent	Time Clock	Time Clock	No Controls	Per Building	Existing	859	8	$129	10%	100%	$0.03	17	17
Washington	Warehouse	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,754	15	$1,153	100%	N/A	$0.09	0.00	0.00
Washington	Warehouse	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,192	15	$4,191	95%	N/A	$0.20	218	224
Washington	Warehouse	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,947	22	$29,220	50%	N/A	$1.48	6	6
Washington	Warehouse	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,226	15	$209	25%	N/A	$-0.02	0.00	0.00
Washington	Warehouse	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	592	15	$18,588	100%	N/A	$3.43	0.00	0.00

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Washington	Warehouse	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,034	8	$1,829	75%	50%	$0.30	92	92
Washington	Warehouse	Lighting Interior Hid	Time Clock	Time Clock	No Controls	Per Building	Existing	715	8	$129	10%	95%	$0.03	15	15
Washington	Warehouse	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	49	11	$19	95%	50%	$0.05	6	6
Washington	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.11	2	2
Washington	Warehouse	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	343	10	$832	0.5%	95%	$0.35	0.01	0.01
Washington	Warehouse	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	870	8	$8,000	10%	98%	$1.55	0.68	0.68
Washington	Warehouse	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	652	8	$6,000	10%	98%	$1.55	0.00	0.00
Washington	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.11	0.07	0.07
Washington	Warehouse	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,889	13	$5,855	100%	N/A	$0.39	16	16
Washington	Warehouse	Lighting Interior Other	New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Per Building	New	6,989	30	$6,989	5.0%	100%	$0.09	2	2
Washington	Warehouse	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,863	8	$1,829	75%	50%	$0.17	5	5
Washington	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,187	4	$93	85%	N/A	$-0.00	0.00	162
Washington	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,289	1	$61	100%	N/A	$0.00	0.00	0.00
Washington	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,716	1	$47	100%	N/A	$-0.01	0.00	0.00
Washington	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,246	12	$1,163	15%	N/A	$0.02	17	131
Washington	Warehouse	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	574	8	$1,829	75%	50%	$0.54	18	18
Washington	Warehouse	Lighting Interior Screw Base	Time Clock	Time Clock	No Controls	Per Building	Existing	397	8	$129	10%	95%	$0.06	3	3
Washington	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.54	10%	90%	$0.05	0.04	0.04
Washington	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	62	4	$0.00	10%	45%	$0.00	0.74	0.74
Washington	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	153	10	$0.75	95%	75%	$0.00	28	28
Washington	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$1	5.0%	86%	$0.06	0.07	0.07

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Washington	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	66	4	$13	60%	90%	$0.06	9	9
Washington	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.54	10%	90%	$0.05	0.00	0.00
Washington	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	62	4	$0.00	10%	45%	$0.00	0.02	0.02
Washington	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	153	10	$0.75	95%	75%	$0.00	0.99	0.99
Washington	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$1	5.0%	86%	$0.06	0.00	0.00
Washington	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	66	4	$13	60%	90%	$0.06	0.32	0.32
Washington	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	127	6	$138	100%	N/A	$0.23	0.97	0.97
Washington	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	127	6	$138	100%	N/A	$0.23	0.05	0.05
Washington	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	94	6	$11	100%	N/A	$0.02	2	2
Washington	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	94	6	$11	100%	N/A	$0.02	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	14	20	$5	100%	N/A	$0.04	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$11	100%	N/A	$0.04	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	37	20	$145	100%	N/A	$0.39	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	46	20	$194	100%	N/A	$0.42	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	52	20	$29	100%	N/A	$0.06	2	2
Washington	Warehouse	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	222	20	$39	8.8%	100%	$0.02	4	4
Washington	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	14	20	$5	100%	N/A	$0.04	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Market Standard	RTF Market Standard Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$11	100%	N/A	$0.04	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	37	20	$145	100%	N/A	$0.39	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	46	20	$194	100%	N/A	$0.42	0.00	0.00
Washington	Warehouse	Refrigerators	Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	52	20	$29	100%	N/A	$0.06	0.21	0.21
Washington	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,110	15	$1,750	75%	76%	$0.10	29	29
Washington	Warehouse	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	527	18	$2,400	45%	65%	$0.48	3	3
Washington	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,165	14	$9,070	5.0%	94%	$0.35	3	3
Washington	Warehouse	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,110	12	$70	10%	39%	$0.00	1	1
Washington	Warehouse	Space Heat	Insulation - Ceiling	R-30ci (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,896	25	$7,800	45%	61%	$0.16	30	30
Washington	Warehouse	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	Existing	486	25	$2,700	25%	85%	$0.55	2	2
Washington	Warehouse	Space Heat	Insulation - Duct	R-7 (WA State Code)	No Insulation	Per Building	Existing	886	20	$1,934	45%	58%	$0.22	4	4
Washington	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30 (WA State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,373	25	$9,400	15%	81%	$0.13	19	19

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Washington	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	Existing	944	25	$2,900	15%	90%	$0.30	2	2
Washington	Warehouse	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 7.5ci (WA State Code)	Per Building	Existing	0.00	25	$2,415	10%	85%	.	0.00	0.00
Washington	Warehouse	Space Heat	Insulation - Wall	R-13 + 7.5ci (WA State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$23,109	10%	66%	.	0.00	0.00
Washington	Warehouse	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,637	7	$1,971	90%	85%	$0.14	40	40
Washington	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	Existing	2,662	25	$6	15%	90%	$0.00	6	6
Washington	Warehouse	Space Heat	Windows-High Efficiency	U-0.40 (WA State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,428	25	$98	15%	70%	$0.00	4	4
Washington	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,750	15	$1,750	75%	76%	$0.12	0.85	0.85
Washington	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,625	14	$9,070	5.0%	94%	$0.42	0.09	0.09
Washington	Warehouse	Space Heat	Insulation - Ceiling	R-38	R-30ci (WA State Code)	Per Building	New	403	25	$2,700	75%	85%	$0.66	0.15	0.15
Washington	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WA State Code)	Per Building	New	783	25	$2,900	35%	90%	$0.37	0.14	0.14
Washington	Warehouse	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,750	15	$10,000	10%	75%	$0.67	0.09	0.09
Washington	Warehouse	Space Heat	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	7,121	30	$7,121	5.0%	100%	$0.09	0.20	0.20
Washington	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.40 (WA State Code)	Per Building	New	2,208	25	$6	80%	90%	$0.00	1	1
Washington	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	111	10	$15	100%	N/A	$0.02	13	13
Washington	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	111	10	$15	100%	N/A	$0.02	0.52	0.52
Washington	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	52	15	$66	95%	76%	$0.15	3	3
Washington	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	1,300	20	$1,113	55%	45%	$0.09	84	84
Washington	Warehouse	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	176	7	$50	65%	25%	$0.05	7	7
Washington	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	51	15	$66	95%	76%	$0.15	0.33	0.33
Washington	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	1,275	20	$1,113	55%	45%	$0.09	2	2
Washington	Warehouse	Ventilation And Circulation	New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Per Building	New	2,034	30	$2,034	5.0%	100%	$0.09	0.62	0.62
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,179	15	$144	75%	N/A	$0.02	0.00	0.00
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,187	15	$241	75%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,214	15	$417	75%	N/A	$0.05	0.02	0.04
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,227	15	$346	75%	N/A	$0.04	0.13	0.18
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,179	15	$144	75%	N/A	$0.02	0.00	0.00
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Market Standard	RTF Market Standard Heat Pump Water Heater GT 55 GAL - EF 1.99	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,187	15	$241	75%	N/A	$0.03	0.00	0.00
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater GT 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,214	15	$417	75%	N/A	$0.05	0.00	0.00
Washington	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater GT 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,227	15	$346	75%	N/A	$0.04	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	46	10	$2,778	55%	94%	$8.71	0.22	0.22
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	0.93	12	$2	75%	35%	$0.41	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.98	75%	35%	$0.42	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	184	25	$800	2.5%	100%	$0.43	0.04	0.04
Washington	Warehouse	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	9	12	$25	80%	90%	$0.36	0.05	0.05
Washington	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	14	9	$5	95%	25%	$-0.01	0.03	0.03
Washington	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	1	1
Washington	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	1	1
Washington	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	23	10	$78	75%	95%	$0.45	0.15	0.15
Washington	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	46	10	$2,778	55%	94%	$8.71	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	0.93	12	$2	75%	35%	$0.41	0.00	0.00

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Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.98	75%	35%	$0.42	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	184	25	$640	2.5%	100%	$0.34	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	14	9	$0.04	95%	25%	$-0.07	0.00	0.00
Washington	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.03	0.03
Washington	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	23	10	$78	75%	95%	$0.45	0.00	0.00
Washington	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	719	15	$852	75%	N/A	$0.16	11	13
Washington	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,121	15	$1,296	75%	N/A	$0.15	56	62
Washington	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	27	15	$54	100%	N/A	$0.23	0.00	0.00
Washington	Warehouse	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	27	15	$54	100%	N/A	$0.23	0.00	0.00
Washington	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater LE 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	719	15	$852	75%	N/A	$0.16	0.59	0.59
Washington	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater LE 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,121	15	$1,296	75%	N/A	$0.15	2	2
Washington	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	27	15	$54	100%	N/A	$0.23	0.00	0.00
Washington	Warehouse	Water Heat LE 55 Gal	Water Heater - RTF Market Standard Storage	RTF Market Standard Storage Water Heater LE 55 GAL - EF 0.93	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	27	15	$54	100%	N/A	$0.23	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	98	10	$2,778	25%	94%	$4.07	1	1
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	0.93	12	$2	75%	35%	$0.41	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.98	75%	35%	$0.42	0.00	0.00

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Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$3	75%	55%	$0.40	0.02	0.03
Washington	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	395	25	$800	2.5%	100%	$0.20	0.66	0.66
Washington	Warehouse	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WA State Code)	No Insulation	Per Building	Existing	19	12	$25	80%	90%	$0.17	0.95	0.95
Washington	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	31	9	$5	95%	25%	$-0.00	0.51	0.51
Washington	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	Existing	141	10	$7	95%	85%	$-0.03	7	7
Washington	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Per Building	Existing	361	10	$74	95%	62%	$-0.01	14	14
Washington	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	49	10	$78	75%	95%	$0.19	2	2
Washington	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	98	10	$2,778	25%	94%	$4.07	0.04	0.04
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	0.93	12	$2	75%	35%	$0.41	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.98	75%	35%	$0.42	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2014 Dishwasher - 289 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$3	75%	55%	$0.40	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	395	25	$640	2.5%	100%	$0.16	0.00	0.00
Washington	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	31	9	$0.04	95%	25%	$-0.03	0.01	0.01
Washington	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Per Building	New	141	10	$7	95%	85%	$-0.03	0.21	0.21
Washington	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	49	10	$78	75%	95%	$0.19	0.06	0.06
Washington	Warehouse Controlled Atmosphere	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	17,892	15	$11,747	0.0%	N/A	$0.08	0.00	0.00
Washington	Warehouse Controlled Atmosphere	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	22,399	15	$42,657	0.0%	N/A	$0.22	0.00	0.00

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Washington	Warehouse Controlled Atmosphere	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	19,860	22	$97,682	0.0%	N/A	$1.54	0.00	0.00
Washington	Warehouse Controlled Atmosphere	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	12,512	15	$2,131	0.0%	N/A	$0.02	0.00	0.00
Washington	Warehouse Controlled Atmosphere	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,058	15	$89,349	0.0%	N/A	$3.62	0.00	0.00
Washington	Warehouse Controlled Atmosphere	Lighting Interior Other	Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	7,209	13	$22,344	0.0%	N/A	$0.39	0.00	0.00
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - CO2 Scrub	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - CO2 Scrub	No Retrofit	Per Building	Existing	27,660	10	$0	29%	52%	$0.08	4,946	4,946
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - Membrane	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - Membrane	No Retrofit	Per Building	Existing	5,532	10	$65,106	29%	92%	$0.09	1,750	1,750
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Retrofit	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Retrofit	No Retrofit	Per Building	Existing	45,551	10	$4,104	70%	57%	$0.01	38,053	38,053
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Tuneup	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Tuneup	No Tuneup	Per Building	Existing	86,452	3	$22,058	77%	72%	$0.03	9,703	9,703
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - HighBay Lighting Upgrade Package	Controlled Atmosphere - Fruit Storage - HighBay Lighting Upgrade Package	No Upgrade	Per Building	Existing	63,830	10	$66,564	100%	70%	$0.04	11,320	11,320
Washington	Warehouse Controlled Atmosphere	Refrigeration	Controlled Atmosphere - Fruit Storage - Lighting Controls	Controlled Atmosphere - Fruit Storage - Lighting Controls	No Controls	Per Building	Existing	23,120	10	$8,150	88%	67%	$0.01	4,439	4,439
Wyoming	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	48	4	$5	100%	N/A	$0.03	4	4
Wyoming	Grocery	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	48	4	$5	100%	N/A	$0.03	0.23	0.23
Wyoming	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	456	12	$76	90%	90%	$0.02	23	23
Wyoming	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	41	12	$107	35%	90%	$0.35	0.83	0.83
Wyoming	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	196	12	$47	95%	85%	$0.03	10	10
Wyoming	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	341	12	$193	19%	55%	$0.08	0.00	0.00
Wyoming	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	557	12	$356	55%	21%	$0.08	4	4
Wyoming	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	962	12	$542	14%	75%	$0.07	6	6
Wyoming	Grocery	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	456	12	$76	90%	90%	$0.02	2	2

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Wyoming	Grocery	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	41	12	$107	35%	90%	$0.35	0.07	0.07
Wyoming	Grocery	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	196	12	$47	95%	85%	$0.03	0.97	0.97
Wyoming	Grocery	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	341	12	$193	19%	55%	$0.08	0.00	0.00
Wyoming	Grocery	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	557	12	$356	55%	21%	$0.08	0.40	0.40
Wyoming	Grocery	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	962	12	$542	14%	75%	$0.07	0.62	0.62
Wyoming	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	275	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	703	15	$272	100%	N/A	$0.05	0.00	0.00
Wyoming	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,829	15	$-5701.6316	26%	N/A	$-0.11	36	49
Wyoming	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	160	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	410	15	$217	100%	N/A	$0.06	0.00	0.00
Wyoming	Grocery	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,401	15	$-4156.7405	26%	N/A	$-0.14	3	3
Wyoming	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,008	15	$1,050	80%	98%	$0.12	266	266
Wyoming	Grocery	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,513	10	$1,701	10%	90%	$0.16	42	42
Wyoming	Grocery	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,008	5	$480	95%	72%	$0.11	211	211
Wyoming	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,521	15	$6,250	50%	94%	$0.29	338	338
Wyoming	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,008	15	$525	75%	76%	$0.06	144	144
Wyoming	Grocery	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	252	18	$720	45%	65%	$0.31	17	17
Wyoming	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	453	12	$5,450	10%	75%	$1.60	8	8
Wyoming	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,008	40	$30,390	2.0%	**%	$2.68	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	504	12	$59	10%	39%	$0.02	4	4
Wyoming	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	38	25	$1,580	45%	62%	$4.04	2	2
Wyoming	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	3	25	$760	25%	85%	$21.62	0.17	0.17
Wyoming	Grocery	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	302	20	$521	45%	58%	$0.18	18	18

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	181	20	$91	45%	85%	$0.05	16	16
Wyoming	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,820	15%	82%	.	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$870	15%	90%	.	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$2,029	10%	85%	.	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,628	10%	68%	.	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,260	7	$591	90%	85%	$0.09	223	223
Wyoming	Grocery	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	334	10	$526	35%	68%	$0.23	16	16
Wyoming	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,424	25	$12	15%	90%	$0.00	39	39
Wyoming	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,560	25	$76	15%	72%	$0.00	34	34
Wyoming	Grocery	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	543	15	$1,050	80%	98%	$0.23	13	13
Wyoming	Grocery	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,358	15	$6,250	50%	94%	$0.54	18	18
Wyoming	Grocery	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	543	15	$525	75%	76%	$0.11	8	8
Wyoming	Grocery	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	244	12	$5,450	10%	75%	$2.96	0.47	0.47
Wyoming	Grocery	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	543	40	$30,390	2.0%	**%	$4.98	0.00	0.00
Wyoming	Grocery	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$760	75%	85%	$40.13	0.01	0.01
Wyoming	Grocery	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	97	20	$91	45%	85%	$0.10	0.56	0.56
Wyoming	Grocery	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	767	25	$12	80%	90%	$0.00	9	9
Wyoming	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	16	6	$0.36	100%	N/A	$0.00	7	7
Wyoming	Grocery	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	16	6	$0.36	100%	N/A	$0.00	0.80	0.80
Wyoming	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	6	4	$7	100%	N/A	$0.32	0.16	0.16
Wyoming	Grocery	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	6	4	$7	100%	N/A	$0.32	0.12	0.12
Wyoming	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.70	100%	N/A	$0.01	0.00	0.00
Wyoming	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	13	20	$0.35	100%	N/A	$0.00	0.00	0.04
Wyoming	Grocery	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	93	20	$13	8.8%	100%	$0.01	3	3
Wyoming	Grocery	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.70	100%	N/A	$0.01	0.00	0.00
Wyoming	Grocery	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	13	20	$0.35	100%	N/A	$0.00	0.00	0.02
Wyoming	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	858	15	$1,013	100%	N/A	$0.14	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,623	15	$2,027	100%	N/A	$0.09	29	35
Wyoming	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,194	15	$1,050	80%	98%	$0.10	21	21
Wyoming	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,596	15	$525	75%	76%	$0.02	31	31
Wyoming	Grocery	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	649	18	$720	45%	65%	$0.12	3	3
Wyoming	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,103	14	$5,160	5.0%	94%	$0.30	2	2
Wyoming	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,168	12	$5,450	10%	75%	$0.62	1	1
Wyoming	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,194	40	$30,390	2.0%	**%	$2.27	0.00	0.00
Wyoming	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,788	30	$60,087	5.0%	N/A	$0.98	2	2
Wyoming	Grocery	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,947	12	$59	10%	39%	$0.00	1	1
Wyoming	Grocery	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,772	25	$1,580	45%	62%	$0.06	15	15
Wyoming	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	351	25	$760	25%	85%	$0.22	1	1
Wyoming	Grocery	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	778	20	$521	45%	58%	$0.07	3	3
Wyoming	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	467	20	$91	45%	85%	$0.02	3	3
Wyoming	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,624	25	$2,820	15%	82%	$0.08	8	8
Wyoming	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	707	25	$870	15%	90%	$0.12	1	1
Wyoming	Grocery	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$2,029	10%	85%	.	0.00	0.00
Wyoming	Grocery	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,628	10%	68%	.	0.00	0.00
Wyoming	Grocery	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,245	7	$591	90%	85%	$0.03	46	46
Wyoming	Grocery	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	334	10	$526	35%	68%	$0.23	1	1
Wyoming	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	3,667	25	$12	15%	90%	$0.00	8	8
Wyoming	Grocery	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,017	25	$76	15%	72%	$0.00	7	7
Wyoming	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	453	15	$810	100%	N/A	$0.21	0.00	0.00
Wyoming	Grocery	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,329	15	$1,621	100%	N/A	$0.14	2	2
Wyoming	Grocery	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	569	15	$1,050	80%	98%	$0.22	0.95	0.95
Wyoming	Grocery	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,238	15	$525	75%	76%	$0.05	1	1

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Wyoming	Grocery	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,003	14	$5,160	5.0%	94%	$0.63	0.09	0.09
Wyoming	Grocery	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	557	12	$5,450	10%	75%	$1.30	0.08	0.08
Wyoming	Grocery	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	569	40	$30,390	2.0%	**%	$4.75	0.00	0.00
Wyoming	Grocery	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,093	30	$30,865	5.0%	N/A	$0.94	0.20	0.20
Wyoming	Grocery	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	167	25	$760	75%	85%	$0.45	0.12	0.12
Wyoming	Grocery	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	222	20	$91	45%	85%	$0.04	0.10	0.10
Wyoming	Grocery	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	337	25	$870	35%	90%	$0.26	0.12	0.12
Wyoming	Grocery	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	1,748	25	$12	80%	90%	$0.00	1	1
Wyoming	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	281	8	$78	5.0%	95%	$0.05	6	6
Wyoming	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	682	8	$372	75%	70%	$0.09	187	187
Wyoming	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	567	15	$766	62%	90%	$0.16	165	165
Wyoming	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	286	8	$548	45%	55%	$0.33	29	29
Wyoming	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	46	13	$70	75%	95%	$0.19	17	17
Wyoming	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,733	17	$1,857	5.0%	95%	$0.07	67	67
Wyoming	Grocery	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	281	8	$78	5.0%	95%	$0.05	0.71	0.71
Wyoming	Grocery	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	682	8	$372	75%	70%	$0.09	19	19
Wyoming	Grocery	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	567	15	$766	62%	90%	$0.16	15	15
Wyoming	Grocery	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	286	8	$548	45%	55%	$0.33	2	2
Wyoming	Grocery	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	46	13	$70	75%	95%	$0.19	1	1
Wyoming	Grocery	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,733	17	$1,857	5.0%	95%	$0.07	5	5
Wyoming	Grocery	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	461	10	$249	5.0%	95%	$0.08	9	9
Wyoming	Grocery	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,214	8	$3,000	5.0%	96%	$0.12	91	91
Wyoming	Grocery	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,161	8	$2,250	5.0%	96%	$0.12	67	67
Wyoming	Grocery	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	2,502	6	$928	85%	80%	$0.08	769	769

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Wyoming	Grocery	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	1,535	6	$779	85%	80%	$0.11	471	471
Wyoming	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,450	13	$-58.185671	100%	N/A	$-0.01	0.00	0.00
Wyoming	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,959	13	$829	100%	N/A	$0.05	417	454
Wyoming	Grocery	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,185	13	$14,310	25%	N/A	$0.57	173	188
Wyoming	Grocery	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,100	8	$548	5.0%	55%	$0.04	22	22
Wyoming	Grocery	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	623	15	$200	100%	N/A	$0.04	0.00	0.00
Wyoming	Grocery	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	767	15	$842	95%	N/A	$0.13	121	121
Wyoming	Grocery	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	684	13	$6,120	50%	N/A	$1.14	5	5
Wyoming	Grocery	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	435	9	$2	25%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	217	15	$3,878	100%	N/A	$2.09	0.00	0.00
Wyoming	Grocery	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	288	8	$548	5.0%	55%	$0.32	3	3
Wyoming	Grocery	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	260	11	$101	95%	50%	$0.05	64	64
Wyoming	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	52	13	$44	95%	98%	$0.11	25	25
Wyoming	Grocery	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	504	10	$249	5.0%	95%	$0.07	1	1
Wyoming	Grocery	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,606	8	$3,000	5.0%	96%	$0.14	8	8
Wyoming	Grocery	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,705	8	$2,250	5.0%	96%	$0.14	6	6
Wyoming	Grocery	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	1,936	6	$473	85%	80%	$0.05	67	67
Wyoming	Grocery	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	873	6	$340	85%	80%	$0.08	30	30
Wyoming	Grocery	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	52	13	$44	95%	98%	$0.11	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Lighting Interior Other	Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,766	13	$6,915	100%	N/A	$0.50	80	81
Wyoming	Grocery	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,296	8	$548	5.0%	55%	$0.04	2	2
Wyoming	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,745	4	$62	98%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,771	1	$41	100%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,696	1	$33	100%	N/A	$0.00	0.00	0.00
Wyoming	Grocery	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,810	12	$774	15%	N/A	$0.01	7	7
Wyoming	Grocery	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	175	8	$548	5.0%	55%	$0.53	2	2
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.65	10%	90%	$0.05	0.11	0.11
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	25	4	$0.00	10%	45%	$0.00	0.60	0.60
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	11	11
Wyoming	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	316	316
Wyoming	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	8	4	$0.45	5.0%	86%	$0.02	0.18	0.18
Wyoming	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	60	4	$12	60%	90%	$0.06	16	16
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.65	10%	90%	$0.05	0.01	0.01
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	25	4	$0.00	10%	45%	$0.00	0.06	0.06
Wyoming	Grocery	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	1	1
Wyoming	Grocery	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	30	30
Wyoming	Grocery	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	8	4	$0.45	5.0%	86%	$0.02	0.02	0.02
Wyoming	Grocery	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	60	4	$12	60%	90%	$0.06	1	1
Wyoming	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	52	6	$56	100%	N/A	$0.23	0.78	0.78
Wyoming	Grocery	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	52	6	$56	100%	N/A	$0.23	0.12	0.12
Wyoming	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	21	6	$2	100%	N/A	$0.02	0.97	0.97
Wyoming	Grocery	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	21	6	$2	100%	N/A	$0.02	0.00	0.00
Wyoming	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	2,934	8	$252	90%	45%	$0.01	448	448
Wyoming	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	4,867	15	$1,182	100%	77%	$0.03	1,404	1,404

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	3,363	15	$364	95%	95%	$0.01	1,144	1,144
Wyoming	Grocery	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	250	15	$164	95%	95%	$0.08	85	85
Wyoming	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	3,292	10	$2,731	95%	80%	$0.12	943	943
Wyoming	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	4,470	10	$3,702	95%	80%	$0.12	1,281	1,281
Wyoming	Grocery	Refrigeration	Compressor VSD Retrofit	VSD Compressor	Constant Speed Compressor	Per Building	Existing	7,514	13	$1,334	60%	77%	$0.02	1,028	1,028
Wyoming	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	872	10	$3,300	95%	68%	$0.55	158	158
Wyoming	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	484	8	$47	50%	95%	$0.02	86	86
Wyoming	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	Existing	2,077	15	$706	50%	81%	$0.04	234	234
Wyoming	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	477	12	$452	95%	77%	$0.13	130	130
Wyoming	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	1,210	5	$192	95%	85%	$0.04	267	267
Wyoming	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	4,080	3	$640	95%	85%	$0.06	891	891
Wyoming	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	375	12	$-88.211516	95%	81%	$-0.03	108	108
Wyoming	Grocery	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	1,844	13	$263	80%	90%	$0.02	338	338
Wyoming	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	683	4	$493	95%	20%	$0.21	32	32
Wyoming	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	7,890	15	$1,956	75%	95%	$0.03	1,401	1,401
Wyoming	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	93	10	$17	100%	85%	$0.03	29	29
Wyoming	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	491	15	$545	75%	95%	$0.13	132	132
Wyoming	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	387	15	$349	75%	95%	$0.11	62	62
Wyoming	Grocery	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	2,934	8	$252	90%	45%	$0.01	46	46
Wyoming	Grocery	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	4,867	15	$1,182	100%	77%	$0.03	130	130
Wyoming	Grocery	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	3,292	10	$2,731	95%	80%	$0.12	90	90
Wyoming	Grocery	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	4,470	10	$3,702	95%	80%	$0.12	122	122
Wyoming	Grocery	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	872	10	$3,300	95%	68%	$0.55	16	16
Wyoming	Grocery	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	484	8	$47	50%	95%	$0.02	8	8
Wyoming	Grocery	Refrigeration	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Per Building	New	2,077	15	$706	50%	81%	$0.04	24	24

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	477	12	$452	95%	77%	$0.13	12	12
Wyoming	Grocery	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	1,210	5	$192	95%	85%	$0.04	32	32
Wyoming	Grocery	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	2,040	3	$248	80%	90%	$0.04	48	48
Wyoming	Grocery	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	375	12	$-88.211516	95%	81%	$-0.03	10	10
Wyoming	Grocery	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	683	4	$493	95%	20%	$0.21	4	4
Wyoming	Grocery	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	7,890	15	$1,956	75%	95%	$0.03	152	152
Wyoming	Grocery	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	93	10	$17	100%	85%	$0.03	2	2
Wyoming	Grocery	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	491	15	$545	75%	95%	$0.13	12	12
Wyoming	Grocery	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	387	15	$349	75%	95%	$0.11	6	6
Wyoming	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	164	20	$447	100%	N/A	$0.28	0.00	0.00
Wyoming	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	184	20	$600	100%	N/A	$0.33	17	21
Wyoming	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	144	20	$35	100%	N/A	$0.02	0.00	0.00
Wyoming	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	46	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Grocery	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,097	20	$122	8.8%	100%	$0.01	37	37
Wyoming	Grocery	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	164	20	$447	100%	N/A	$0.28	0.00	0.00
Wyoming	Grocery	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	184	20	$600	100%	N/A	$0.33	4	4
Wyoming	Grocery	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	144	20	$35	100%	N/A	$0.02	0.00	0.00
Wyoming	Grocery	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	46	20	$16	100%	N/A	$0.04	0.00	0.00
Wyoming	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,773	15	$525	75%	76%	$0.03	117	117
Wyoming	Grocery	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	443	18	$720	45%	65%	$0.17	14	14
Wyoming	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,659	14	$5,160	5.0%	94%	$0.24	13	13
Wyoming	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	797	12	$5,450	10%	75%	$0.91	6	6
Wyoming	Grocery	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,773	12	$59	10%	39%	$0.00	7	7
Wyoming	Grocery	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,488	25	$1,580	45%	62%	$0.05	104	104
Wyoming	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	441	25	$760	25%	85%	$0.17	9	9
Wyoming	Grocery	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	531	20	$521	45%	58%	$0.10	14	14
Wyoming	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	319	20	$91	45%	85%	$0.03	12	12

Table C-2.2. Commercial Measure Details

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Wyoming	Grocery	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,263	25	$2,820	15%	82%	$0.07	52	52
Wyoming	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	793	25	$870	15%	90%	$0.11	10	10
Wyoming	Grocery	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$2,029	10%	85%	.	0.00	0.00
Wyoming	Grocery	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$5,628	10%	68%	.	0.00	0.00
Wyoming	Grocery	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,216	7	$591	90%	85%	$0.05	163	163
Wyoming	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	2,504	25	$12	15%	90%	$0.00	29	29
Wyoming	Grocery	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,743	25	$76	15%	72%	$0.00	25	25
Wyoming	Grocery	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	780	15	$525	75%	76%	$0.08	4	4
Wyoming	Grocery	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,170	14	$5,160	5.0%	94%	$0.54	0.57	0.57
Wyoming	Grocery	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	351	12	$5,450	10%	75%	$2.06	0.27	0.27
Wyoming	Grocery	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	194	25	$760	75%	85%	$0.39	0.76	0.76
Wyoming	Grocery	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	140	20	$91	45%	85%	$0.07	0.32	0.32
Wyoming	Grocery	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	349	25	$870	35%	90%	$0.25	0.66	0.66
Wyoming	Grocery	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	1,101	25	$12	80%	90%	$0.00	5	5
Wyoming	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	59	10	$8	100%	N/A	$0.02	12	12
Wyoming	Grocery	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	59	10	$8	100%	N/A	$0.02	1	1
Wyoming	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,526	10	$367	5.0%	90%	$0.02	59	59
Wyoming	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,400	95%	65%	$0.23	360	360
Wyoming	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	128	15	$19	95%	76%	$0.02	45	45
Wyoming	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	3,220	20	$334	55%	45%	$0.01	386	386
Wyoming	Grocery	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	52	7	$15	65%	25%	$0.05	0.00	0.00
Wyoming	Grocery	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	2,640	10	$367	5.0%	90%	$0.02	5	5
Wyoming	Grocery	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,400	95%	65%	$0.23	30	30
Wyoming	Grocery	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	134	15	$19	95%	76%	$0.02	4	4

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Wyoming	Grocery	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	3,366	20	$334	55%	45%	$0.01	23	23
Wyoming	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	715	15	$322	75%	N/A	$0.05	0.00	1
Wyoming	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	707	15	$192	75%	N/A	$0.03	0.00	0.00
Wyoming	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	697	15	$322	75%	N/A	$0.05	0.00	0.21
Wyoming	Grocery	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	690	15	$192	75%	N/A	$0.03	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	60	10	$833	75%	94%	$2.03	0.63	0.63
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	45%	35%	$0.37	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	45%	35%	$0.08	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	45%	55%	$0.41	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	45%	55%	$0.38	0.04	0.05
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	96	12	$54	40%	95%	$0.08	0.47	0.59
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	88	12	$54	40%	94%	$0.08	0.43	0.53
Wyoming	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	240	25	$800	2.5%	100%	$0.33	0.08	0.08
Wyoming	Grocery	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	12	12	$25	80%	90%	$0.28	0.11	0.11
Wyoming	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	19	9	$8	95%	25%	$0.07	0.06	0.06
Wyoming	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.09	3	3
Wyoming	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	30	10	$117	75%	95%	$0.57	0.31	0.31
Wyoming	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	136	10	$2,730	55%	94%	$2.91	0.72	0.72
Wyoming	Grocery	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	57	10	$833	75%	94%	$2.10	0.04	0.04

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	45%	35%	$0.37	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	45%	35%	$0.08	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	45%	55%	$0.41	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	45%	55%	$0.38	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	91	12	$51	40%	95%	$0.08	0.03	0.03
Wyoming	Grocery	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$51	40%	94%	$0.08	0.03	0.03
Wyoming	Grocery	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	231	25	$640	2.5%	100%	$0.28	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	18	9	$0.06	95%	25%	$0.00	0.00	0.00
Wyoming	Grocery	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.09	0.28	0.28
Wyoming	Grocery	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	28	10	$117	75%	95%	$0.59	0.02	0.02
Wyoming	Grocery	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	132	10	$2,730	55%	94%	$3.01	0.05	0.05
Wyoming	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	651	15	$1,655	75%	N/A	$0.30	57	72
Wyoming	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	39	15	$72	100%	N/A	$0.22	0.00	0.00
Wyoming	Grocery	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	635	15	$1,655	75%	N/A	$0.31	7	8
Wyoming	Grocery	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	38	15	$72	100%	N/A	$0.22	0.00	0.00
Wyoming	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	61	10	$833	50%	94%	$1.98	5	5
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.37	0.00	0.04
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.11	0.13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.41	0.00	0.11
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.38	0.89	1
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	96	12	$54	50%	95%	$0.08	7	9
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	88	12	$54	50%	95%	$0.08	7	8
Wyoming	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	245	25	$800	2.5%	100%	$0.32	1	1
Wyoming	Grocery	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	12	12	$25	80%	90%	$0.28	1	1
Wyoming	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	19	9	$8	95%	25%	$0.07	0.90	0.90
Wyoming	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	322	4	$97	95%	74%	$0.09	44	44
Wyoming	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	30	10	$117	75%	95%	$0.56	4	4
Wyoming	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	139	10	$2,730	55%	94%	$2.85	9	9
Wyoming	Grocery	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	58	10	$833	50%	94%	$2.09	0.44	0.44
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.37	0.00	0.00
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.01	0.01
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.41	0.00	0.01
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.38	0.07	0.07
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	91	12	$51	50%	95%	$0.08	0.70	0.70
Wyoming	Grocery	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	83	12	$51	50%	95%	$0.08	0.64	0.64
Wyoming	Grocery	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	232	25	$640	2.5%	100%	$0.27	0.02	0.02

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Wyoming	Grocery	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	18	9	$0.06	95%	25%	$0.00	0.07	0.07
Wyoming	Grocery	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	322	4	$97	95%	74%	$0.09	4	4
Wyoming	Grocery	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	29	10	$117	75%	95%	$0.59	0.33	0.33
Wyoming	Grocery	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	132	10	$2,730	55%	94%	$3.01	0.75	0.75
Wyoming	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	617	4	$70	100%	N/A	$0.03	63	73
Wyoming	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	952	4	$70	95%	30%	$0.02	171	171
Wyoming	Health	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	617	4	$70	100%	N/A	$0.03	3	3
Wyoming	Health	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	952	4	$70	95%	30%	$0.02	19	19
Wyoming	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	34	12	$5	90%	90%	$0.02	0.11	0.11
Wyoming	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	3	12	$8	25%	90%	$0.35	0.00	0.00
Wyoming	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	39	12	$9	95%	85%	$0.03	0.14	0.14
Wyoming	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	69	12	$39	7.0%	55%	$0.08	0.01	0.01
Wyoming	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	112	12	$72	15%	21%	$0.08	0.01	0.01
Wyoming	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	195	12	$109	11%	75%	$0.07	0.06	0.06
Wyoming	Health	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	34	12	$5	90%	90%	$0.02	0.01	0.01
Wyoming	Health	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	3	12	$8	25%	90%	$0.35	0.00	0.00
Wyoming	Health	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	39	12	$9	95%	85%	$0.03	0.01	0.01
Wyoming	Health	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	69	12	$39	7.0%	55%	$0.08	0.00	0.00
Wyoming	Health	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	112	12	$72	15%	21%	$0.08	0.00	0.00
Wyoming	Health	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	195	12	$109	11%	75%	$0.07	0.00	0.00
Wyoming	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	514	15	$1,250	5.0%	94%	$0.29	1	1
Wyoming	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	64	5	$851	95%	81%	$3.16	3	3
Wyoming	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	388	10	$3,932	25%	70%	$1.48	5	5
Wyoming	Health	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	257	15	$9,129	45%	90%	$4.16	7	7

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	1,161	20	$1,620	100%	N/A	$0.14	29	38
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	193	20	$270	100%	N/A	$0.14	0.00	0.00
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	709	20	$990	100%	N/A	$0.14	0.00	0.00
Wyoming	Health	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,542	15	$15,200	15%	68%	$0.44	11	11
Wyoming	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	514	15	$1,750	15%	98%	$0.40	5	5
Wyoming	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	411	7	$486	10%	94%	$0.22	2	2
Wyoming	Health	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	720	15	$43	65%	35%	$0.01	11	11
Wyoming	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	205	13	$351	75%	65%	$0.22	6	6
Wyoming	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	514	15	$875	75%	76%	$0.08	18	18
Wyoming	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	231	12	$5,450	2.5%	75%	$1.18	0.26	0.26
Wyoming	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	514	40	$50,650	2.0%	**%	$8.77	0.00	0.00
Wyoming	Health	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	257	12	$129	10%	39%	$0.02	0.60	0.60
Wyoming	Health	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	8	25	$2,633	45%	66%	$0.26	0.15	0.15
Wyoming	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1	25	$1,266	25%	85%	$0.59	0.02	0.02
Wyoming	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,700	15%	83%	.	0.00	0.00
Wyoming	Health	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,450	15%	90%	.	0.00	0.00
Wyoming	Health	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Health	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	74%	.	0.00	0.00
Wyoming	Health	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WY State Code)	No Insulation	Per Building	Existing	77	15	$102	65%	45%	$0.16	1	1
Wyoming	Health	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	642	7	$985	90%	85%	$0.11	29	29
Wyoming	Health	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	561	10	$1,142	35%	68%	$0.30	7	7
Wyoming	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	726	25	$27	15%	90%	$0.00	5	5
Wyoming	Health	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	795	25	$166	15%	72%	$0.01	4	4
Wyoming	Health	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	244	15	$666	5.0%	94%	$0.32	0.07	0.07

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	30	5	$851	95%	81%	$6.66	0.18	0.18
Wyoming	Health	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	184	10	$3,539	25%	70%	$2.80	0.22	0.22
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	649	20	$1,458	100%	N/A	$0.23	3	3
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	108	20	$243	100%	N/A	$0.23	0.00	0.00
Wyoming	Health	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	396	20	$891	100%	N/A	$0.23	0.00	0.00
Wyoming	Health	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	244	15	$1,750	15%	98%	$0.84	0.23	0.23
Wyoming	Health	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	195	7	$437	10%	94%	$0.42	0.13	0.13
Wyoming	Health	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	97	13	$316	75%	65%	$0.41	0.31	0.31
Wyoming	Health	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	244	15	$875	75%	76%	$0.13	0.88	0.88
Wyoming	Health	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	109	12	$5,450	2.5%	75%	$1.97	0.01	0.01
Wyoming	Health	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	244	40	$50,650	2.0%	**%	$18.48	0.00	0.00
Wyoming	Health	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	0.84	25	$1,266	75%	85%	$0.88	0.00	0.00
Wyoming	Health	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	344	25	$27	80%	90%	$0.00	1	1
Wyoming	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	304	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	583	15	$397	100%	N/A	$0.08	0.00	0.00
Wyoming	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	3,921	15	$-8550.0419	20%	N/A	$-0.26	30	40
Wyoming	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	168	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Health	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	323	15	$318	100%	N/A	$0.12	0.00	0.00
Wyoming	Health	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	2,174	15	$-6387.5002	20%	N/A	$-0.34	2	2

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Wyoming	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	685	15	$1,250	5.0%	94%	$0.21	16	16
Wyoming	Health	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,055	15	$15,200	15%	68%	$0.39	103	103
Wyoming	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	685	15	$1,750	15%	98%	$0.30	48	48
Wyoming	Health	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,027	10	$2,835	10%	30%	$0.40	14	14
Wyoming	Health	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	685	5	$800	95%	72%	$0.28	222	222
Wyoming	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,713	15	$10,416	50%	94%	$0.71	355	355
Wyoming	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	685	15	$875	75%	76%	$0.07	151	151
Wyoming	Health	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	171	18	$1,200	45%	65%	$0.34	18	18
Wyoming	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	308	12	$5,450	2.5%	75%	$1.05	2	2
Wyoming	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	685	40	$50,650	2.0%	**%	$6.58	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	342	12	$129	10%	39%	$0.01	4	4
Wyoming	Health	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	11	25	$2,633	45%	66%	$0.26	1	1
Wyoming	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	2	25	$1,266	25%	85%	$0.59	0.18	0.18
Wyoming	Health	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	205	20	$869	45%	59%	$0.19	19	19
Wyoming	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	123	20	$152	45%	85%	$0.06	17	17
Wyoming	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,700	15%	83%	.	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,450	15%	90%	.	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	74%	.	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	856	7	$985	90%	85%	$0.10	235	235
Wyoming	Health	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	561	10	$1,142	35%	68%	$0.30	43	43
Wyoming	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	967	25	$27	15%	90%	$0.00	41	41
Wyoming	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,060	25	$166	15%	72%	$0.01	35	35
Wyoming	Health	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	352	15	$666	5.0%	94%	$0.22	0.80	0.80
Wyoming	Health	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	352	15	$1,750	15%	98%	$0.58	2	2

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Wyoming	Health	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	882	15	$10,416	50%	94%	$1.38	19	19
Wyoming	Health	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	352	15	$875	75%	76%	$0.11	8	8
Wyoming	Health	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	158	12	$5,450	2.5%	75%	$1.74	0.12	0.12
Wyoming	Health	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	352	40	$50,650	2.0%	**%	$12.78	0.00	0.00
Wyoming	Health	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,266	75%	85%	$0.87	0.01	0.01
Wyoming	Health	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	63	20	$152	45%	85%	$0.09	0.58	0.58
Wyoming	Health	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	498	25	$27	80%	90%	$0.00	9	9
Wyoming	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	14	6	$0.31	100%	N/A	$0.00	9	9
Wyoming	Health	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	14	6	$0.31	100%	N/A	$0.00	0.99	0.99
Wyoming	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	83	4	$94	100%	N/A	$0.32	3	3
Wyoming	Health	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	83	4	$94	100%	N/A	$0.32	2	2
Wyoming	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.68	100%	N/A	$0.01	0.00	0.00
Wyoming	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	12	20	$0.34	100%	N/A	$0.00	0.00	0.06
Wyoming	Health	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	90	20	$13	8.8%	100%	$0.01	4	4
Wyoming	Health	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.68	100%	N/A	$0.01	0.00	0.00
Wyoming	Health	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	12	20	$0.34	100%	N/A	$0.00	0.00	0.03
Wyoming	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	2,817	15	$1,626	100%	N/A	$0.07	31	38
Wyoming	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	691	15	$1,250	5.0%	94%	$0.21	0.91	0.91
Wyoming	Health	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	14,451	15	$15,200	15%	68%	$0.12	41	41
Wyoming	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	691	15	$1,750	15%	98%	$0.30	2	2
Wyoming	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,817	15	$875	75%	76%	$0.02	74	74
Wyoming	Health	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,204	18	$1,200	45%	65%	$0.11	9	9
Wyoming	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	6,188	14	$8,600	5.0%	94%	$0.17	7	7
Wyoming	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,167	12	$5,450	2.5%	75%	$0.33	1	1

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Wyoming	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	691	40	$50,650	2.0%	**%	$6.53	0.00	0.00
Wyoming	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	10,176	30	$726	5.0%	N/A	$0.94	1	1
Wyoming	Health	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,612	12	$129	10%	39%	$0.00	3	3
Wyoming	Health	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,784	25	$2,633	45%	66%	$0.05	36	36
Wyoming	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1,024	25	$1,266	25%	85%	$0.12	5	5
Wyoming	Health	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,445	20	$869	45%	59%	$0.06	9	9
Wyoming	Health	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	867	20	$152	45%	85%	$0.02	8	8
Wyoming	Health	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	11,812	25	$4,700	15%	83%	$0.04	35	35
Wyoming	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	2,295	25	$1,450	15%	90%	$0.06	7	7
Wyoming	Health	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Health	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	74%	.	0.00	0.00
Wyoming	Health	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,021	7	$985	90%	85%	$0.03	106	106
Wyoming	Health	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	561	10	$1,142	35%	68%	$0.30	2	2
Wyoming	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	6,803	25	$27	15%	90%	$0.00	19	19
Wyoming	Health	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,453	25	$166	15%	72%	$0.00	16	16
Wyoming	Health	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	1,871	15	$1,300	100%	N/A	$0.08	3	3
Wyoming	Health	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	432	15	$666	5.0%	94%	$0.18	0.05	0.05
Wyoming	Health	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	432	15	$1,750	15%	98%	$0.47	0.17	0.17
Wyoming	Health	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,016	15	$875	75%	76%	$0.03	4	4
Wyoming	Health	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	3,875	14	$8,600	5.0%	94%	$0.27	0.47	0.47
Wyoming	Health	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,357	12	$5,450	2.5%	75%	$0.53	0.06	0.06
Wyoming	Health	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	432	40	$50,650	2.0%	**%	$10.42	0.00	0.00
Wyoming	Health	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	6,689	30	$51,803	5.0%	N/A	$0.73	0.29	0.29
Wyoming	Health	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	641	25	$1,266	75%	85%	$0.20	0.63	0.63
Wyoming	Health	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	543	20	$152	45%	85%	$0.03	0.31	0.31

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Wyoming	Health	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,437	25	$1,450	35%	90%	$0.10	0.68	0.69
Wyoming	Health	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	4,260	25	$27	80%	90%	$0.00	5	5
Wyoming	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	468	8	$130	5.0%	95%	$0.05	16	16
Wyoming	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	628	8	$480	75%	70%	$0.13	247	247
Wyoming	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	522	15	$705	62%	90%	$0.16	219	219
Wyoming	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	233	8	$914	90%	43%	$0.67	53	53
Wyoming	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	3	13	$5	75%	95%	$0.19	1	1
Wyoming	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	4,555	17	$3,095	5.0%	95%	$0.07	162	162
Wyoming	Health	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	468	8	$130	5.0%	95%	$0.05	1	1
Wyoming	Health	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	628	8	$480	75%	70%	$0.13	25	25
Wyoming	Health	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	522	15	$705	62%	90%	$0.16	20	20
Wyoming	Health	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	233	8	$914	90%	43%	$0.67	5	5
Wyoming	Health	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	3	13	$5	75%	95%	$0.19	0.18	0.18
Wyoming	Health	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	4,555	17	$3,095	5.0%	95%	$0.07	13	13
Wyoming	Health	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	584	10	$416	25%	95%	$0.10	96	96
Wyoming	Health	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,130	8	$5,000	15%	51%	$0.21	218	218
Wyoming	Health	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,098	8	$3,750	15%	51%	$0.21	161	161
Wyoming	Health	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	118	6	$44	15%	80%	$0.08	9	9
Wyoming	Health	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	72	6	$37	10%	80%	$0.11	4	4
Wyoming	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	738	13	$2,136	100%	N/A	$0.37	0.00	0.00
Wyoming	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	936	13	$-762.78692	100%	N/A	$-0.10	0.00	0.00
Wyoming	Health	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,564	13	$2,536	47%	N/A	$0.13	1	1
Wyoming	Health	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,351	8	$914	75%	43%	$0.07	513	513

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	107	15	$58	100%	N/A	$0.06	0.00	0.00
Wyoming	Health	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	135	15	$197	95%	N/A	$0.17	35	35
Wyoming	Health	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	120	16	$1,338	50%	N/A	$1.26	1	1
Wyoming	Health	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	75	11	$15	25%	N/A	$0.03	0.00	0.00
Wyoming	Health	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	35	15	$853	100%	N/A	$2.82	0.00	0.00
Wyoming	Health	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	48	8	$914	75%	43%	$3.20	10	10
Wyoming	Health	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	727	11	$283	95%	50%	$0.05	260	260
Wyoming	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	145	13	$124	95%	98%	$0.11	102	102
Wyoming	Health	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	566	10	$416	25%	95%	$0.11	8	8
Wyoming	Health	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,073	8	$5,000	15%	51%	$0.28	16	16
Wyoming	Health	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,305	8	$3,750	15%	51%	$0.28	12	12
Wyoming	Health	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	91	6	$22	15%	80%	$0.05	0.80	0.80
Wyoming	Health	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	41	6	$16	15%	80%	$0.08	0.36	0.36
Wyoming	Health	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	145	13	$124	95%	98%	$0.11	8	8
Wyoming	Health	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,550	13	$1,495	100%	N/A	$0.07	176	177
Wyoming	Health	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,281	8	$914	75%	43%	$0.07	50	50
Wyoming	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,336	4	$126	85%	N/A	$0.00	0.00	760
Wyoming	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	11,669	1	$83	100%	N/A	$0.00	0.00	0.00
Wyoming	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,182	1	$64	100%	N/A	$0.00	0.00	0.00

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Wyoming	Health	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,446	12	$1,569	15%	N/A	$0.02	56	656
Wyoming	Health	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	787	8	$914	75%	43%	$0.20	63	63
Wyoming	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	10	7	$2	10%	90%	$0.05	0.74	0.74
Wyoming	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	22	4	$0.00	10%	45%	$0.00	0.74	0.74
Wyoming	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	91	10	$0.45	95%	75%	$0.00	49	49
Wyoming	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	41	10	$29	95%	86%	$0.10	25	25
Wyoming	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	37	4	$0.75	5.0%	86%	$0.01	1	1
Wyoming	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	333	4	$66	60%	90%	$0.06	135	135
Wyoming	Health	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	10	7	$2	10%	90%	$0.05	0.07	0.07
Wyoming	Health	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	22	4	$0.00	10%	45%	$0.00	0.08	0.08
Wyoming	Health	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	91	10	$0.45	95%	75%	$0.00	4	4
Wyoming	Health	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	41	10	$29	95%	86%	$0.10	2	2
Wyoming	Health	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	37	4	$0.75	5.0%	86%	$0.01	0.13	0.13
Wyoming	Health	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	333	4	$66	60%	90%	$0.06	14	14
Wyoming	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	44	6	$48	100%	N/A	$0.23	0.96	0.96
Wyoming	Health	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	44	6	$48	100%	N/A	$0.23	0.15	0.15
Wyoming	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	207	6	$24	100%	N/A	$0.02	13	13
Wyoming	Health	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	207	6	$24	100%	N/A	$0.02	0.00	0.00
Wyoming	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	139	8	$11	15%	45%	$0.01	2	2
Wyoming	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	231	15	$56	5.0%	77%	$0.03	2	2
Wyoming	Health	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	159	15	$17	5.0%	95%	$0.01	1	1
Wyoming	Health	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	11	15	$7	5.0%	95%	$0.08	0.12	0.12
Wyoming	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	156	10	$129	2.5%	80%	$0.12	0.71	0.71
Wyoming	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	212	10	$175	2.5%	80%	$0.12	0.97	0.97
Wyoming	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	41	10	$3,300	5.0%	68%	$11.63	0.31	0.31
Wyoming	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	23	8	$2	5.0%	95%	$0.02	0.25	0.25
Wyoming	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	13	12	$12	95%	77%	$0.13	2	2

Table C-2.2. Commercial Measure Details

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Wyoming	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	193	3	$30	10%	85%	$0.06	3	3
Wyoming	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	10	12	$-2.5142299	95%	81%	$-0.03	1	1
Wyoming	Health	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	87	13	$12	5.0%	90%	$0.02	0.88	0.88
Wyoming	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	19	4	$14	15%	20%	$0.21	0.13	0.13
Wyoming	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	4	10	$0.83	1.0%	85%	$0.03	0.00	0.00
Wyoming	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	23	15	$25	2.5%	95%	$0.13	0.12	0.12
Wyoming	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	11	15	$9	2.5%	95%	$0.11	0.05	0.05
Wyoming	Health	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	139	8	$11	15%	45%	$0.01	0.22	0.22
Wyoming	Health	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	231	15	$56	5.0%	77%	$0.03	0.18	0.18
Wyoming	Health	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	156	10	$129	2.5%	80%	$0.12	0.06	0.06
Wyoming	Health	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	212	10	$175	2.5%	80%	$0.12	0.09	0.09
Wyoming	Health	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	41	10	$3,300	5.0%	68%	$11.63	0.03	0.03
Wyoming	Health	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	23	8	$2	5.0%	95%	$0.02	0.02	0.02
Wyoming	Health	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	13	12	$12	95%	77%	$0.13	0.22	0.22
Wyoming	Health	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	96	3	$11	5.0%	90%	$0.04	0.10	0.10
Wyoming	Health	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	10	12	$-2.5142299	95%	81%	$-0.03	0.18	0.18
Wyoming	Health	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	19	4	$14	15%	20%	$0.21	0.01	0.01
Wyoming	Health	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	4	10	$0.83	1.0%	85%	$0.03	0.00	0.00
Wyoming	Health	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	23	15	$25	2.5%	95%	$0.13	0.01	0.01
Wyoming	Health	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	11	15	$9	2.5%	95%	$0.11	0.00	0.00
Wyoming	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	159	20	$434	100%	N/A	$0.28	0.00	0.00
Wyoming	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	178	20	$581	100%	N/A	$0.33	25	30
Wyoming	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	140	20	$34	100%	N/A	$0.02	0.00	0.00
Wyoming	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	44	20	$15	100%	N/A	$0.04	0.00	0.00
Wyoming	Health	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,064	20	$118	8.8%	100%	$0.01	52	52
Wyoming	Health	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	159	20	$434	100%	N/A	$0.28	0.00	0.00

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Wyoming	Health	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	178	20	$581	100%	N/A	$0.33	6	6
Wyoming	Health	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	140	20	$34	100%	N/A	$0.02	0.00	0.00
Wyoming	Health	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	44	20	$15	100%	N/A	$0.04	0.00	0.00
Wyoming	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	58	9	$7	100%	N/A	$0.02	33	34
Wyoming	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	201	4	$756	10%	50%	$1.07	6	6
Wyoming	Health	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	58	9	$7	100%	N/A	$0.02	3	3
Wyoming	Health	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	201	4	$756	10%	50%	$1.07	0.63	0.63
Wyoming	Health	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	18,600	15	$15,200	15%	68%	$0.09	149	149
Wyoming	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	6,200	15	$875	75%	76%	$0.01	270	270
Wyoming	Health	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,550	18	$1,200	45%	65%	$0.07	33	33
Wyoming	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	9,300	14	$8,600	5.0%	94%	$0.11	31	31
Wyoming	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,790	12	$5,450	2.5%	75%	$0.23	3	3
Wyoming	Health	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	6,200	12	$129	10%	39%	$0.00	17	17
Wyoming	Health	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,216	25	$2,633	45%	66%	$0.04	153	153
Wyoming	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1,545	25	$1,266	25%	85%	$0.08	22	22
Wyoming	Health	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,860	20	$869	45%	59%	$0.04	33	33
Wyoming	Health	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	1,116	20	$152	45%	85%	$0.01	28	28
Wyoming	Health	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	14,908	25	$4,700	15%	83%	$0.03	124	124
Wyoming	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	2,775	25	$1,450	15%	90%	$0.05	24	24
Wyoming	Health	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Health	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	74%	.	0.00	0.00
Wyoming	Health	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	7,750	7	$985	90%	85%	$0.02	385	385
Wyoming	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	8,756	25	$27	15%	90%	$0.00	69	69
Wyoming	Health	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	9,593	25	$166	15%	72%	$0.00	59	59
Wyoming	Health	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,210	15	$875	75%	76%	$0.02	17	17
Wyoming	Health	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	6,315	14	$8,600	5.0%	94%	$0.17	2	2
Wyoming	Health	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,894	12	$5,450	2.5%	75%	$0.35	0.25	0.25
Wyoming	Health	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1,049	25	$1,266	75%	85%	$0.12	2	2
Wyoming	Health	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	757	20	$152	45%	85%	$0.02	1	1
Wyoming	Health	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,884	25	$1,450	35%	90%	$0.08	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	5,946	25	$27	80%	90%	$0.00	20	20
Wyoming	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	129	10	$17	100%	N/A	$0.02	40	40
Wyoming	Health	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	129	10	$17	100%	N/A	$0.02	4	4
Wyoming	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	6,780	10	$613	5.0%	90%	$0.01	229	229
Wyoming	Health	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	10,170	15	$15,200	15%	68%	$0.18	768	768
Wyoming	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	130	18	$297	95%	85%	$0.24	79	79
Wyoming	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	345	15	$33	95%	76%	$0.01	179	179
Wyoming	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	8,644	20	$556	55%	45%	$0.01	1,532	1,532
Wyoming	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	1,779	15	$1,825	8.0%	77%	$0.12	73	73
Wyoming	Health	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	88	7	$25	65%	25%	$0.05	0.00	0.00
Wyoming	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	542	18	$1,705	65%	59%	$0.34	157	157
Wyoming	Health	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	5,730	10	$613	5.0%	90%	$0.02	18	18
Wyoming	Health	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	130	18	$297	95%	85%	$0.24	6	6
Wyoming	Health	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	3,750	50	$12,500	24%	98%	$0.29	37	37
Wyoming	Health	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	292	15	$33	95%	76%	$0.01	14	14
Wyoming	Health	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	7,305	20	$556	55%	45%	$0.01	75	75
Wyoming	Health	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	1,504	15	$1,825	8.0%	77%	$0.14	5	5
Wyoming	Health	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	458	18	$1,705	65%	59%	$0.40	11	11
Wyoming	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,260	15	$1,370	75%	N/A	$0.03	0.06	8
Wyoming	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	6,192	15	$819	75%	N/A	$0.02	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	6,201	15	$1,370	75%	N/A	$0.03	0.00	1
Wyoming	Health	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	6,133	15	$819	75%	N/A	$0.02	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.06	0.21	0.26
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.10	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.06	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	525	10	$1,389	55%	94%	$0.39	2	2
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.37	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.41	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.38	0.02	0.02
Wyoming	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	163	12	$92	10%	95%	$0.08	0.13	0.16
Wyoming	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	149	12	$92	10%	94%	$0.08	0.12	0.15
Wyoming	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,100	25	$3,400	2.5%	100%	$0.16	0.51	0.51
Wyoming	Health	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	105	12	$108	80%	70%	$0.14	0.57	0.57
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	167	9	$28	95%	25%	$0.03	0.40	0.40
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.09	1	1
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	168	10	$11	95%	73%	$0.01	1	1
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	135	10	$29	95%	62%	$0.03	0.80	0.80
Wyoming	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	262	10	$392	75%	95%	$0.22	1	1
Wyoming	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,197	10	$129	2.5%	94%	$0.02	0.25	0.25
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.06	0.01	0.01
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.10	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.06	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	515	10	$1,389	55%	94%	$0.39	0.20	0.20
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.37	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.41	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.38	0.00	0.00
Wyoming	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	161	12	$92	10%	95%	$0.08	0.01	0.01
Wyoming	Health	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	148	12	$92	10%	94%	$0.08	0.01	0.01
Wyoming	Health	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,061	25	$2,720	2.5%	100%	$0.13	0.01	0.01
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	164	9	$0.20	95%	25%	$0.00	0.03	0.03
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.09	0.08	0.08
Wyoming	Health	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	168	10	$11	95%	73%	$0.01	0.08	0.08
Wyoming	Health	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	257	10	$392	75%	95%	$0.22	0.13	0.13
Wyoming	Health	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,175	10	$129	2.5%	94%	$0.02	0.01	0.01
Wyoming	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	5,702	15	$7,036	75%	N/A	$0.14	441	470
Wyoming	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	342	15	$307	100%	N/A	$0.11	0.00	0.00
Wyoming	Health	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	5,647	15	$7,036	75%	N/A	$0.15	65	66

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	338	15	$307	100%	N/A	$0.11	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	112	9	$43	25%	80%	$0.06	2	3
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	24	14	$16	5.0%	97%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$6	5.0%	97%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	42	14	$24	5.0%	97%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	31	14	$23	5.0%	99%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	16	14	$13	5.0%	99%	$0.10	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	49	14	$31	5.0%	99%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	15	14	$9	5.0%	94%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	33	14	$17	5.0%	94%	$0.06	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	537	10	$1,389	75%	94%	$0.38	50	50
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	6	12	$17	75%	35%	$0.37	0.00	0.01
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.78	75%	35%	$0.08	0.03	0.04
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	10	12	$33	75%	55%	$0.41	0.00	0.03
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.38	0.27	0.31

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	163	12	$92	10%	95%	$0.08	1	2
Wyoming	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	149	12	$92	10%	95%	$0.08	1	1
Wyoming	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,148	25	$3,400	2.5%	100%	$0.16	6	6
Wyoming	Health	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	107	12	$108	80%	30%	$0.13	3	3
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	170	9	$28	95%	25%	$0.03	5	5
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	128	4	$39	95%	83%	$0.09	13	13
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	168	10	$11	95%	73%	$0.01	15	15
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	135	10	$29	95%	62%	$0.03	10	10
Wyoming	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	268	10	$392	75%	95%	$0.21	25	25
Wyoming	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,224	10	$129	2.5%	94%	$0.02	3	3
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	112	9	$43	25%	80%	$0.06	0.26	0.26
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	24	14	$16	5.0%	97%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	8	14	$6	5.0%	97%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	42	14	$24	5.0%	97%	$0.07	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	31	14	$23	5.0%	99%	$0.09	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	16	14	$13	5.0%	99%	$0.10	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	49	14	$31	5.0%	99%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	15	14	$9	5.0%	94%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Health	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	33	14	$17	5.0%	94%	$0.06	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	517	10	$1,389	75%	94%	$0.39	3	3
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	6	12	$17	75%	35%	$0.37	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.78	75%	35%	$0.08	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	10	12	$33	75%	55%	$0.41	0.00	0.00
Wyoming	Health	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.38	0.02	0.02
Wyoming	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	161	12	$92	10%	95%	$0.08	0.17	0.17
Wyoming	Health	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	148	12	$92	10%	95%	$0.08	0.15	0.15
Wyoming	Health	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,068	25	$2,720	2.5%	100%	$0.13	0.18	0.18
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	164	9	$0.20	95%	25%	$0.00	0.45	0.45
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	128	4	$39	95%	83%	$0.09	1	1
Wyoming	Health	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	168	10	$11	95%	73%	$0.01	1	1
Wyoming	Health	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	258	10	$392	75%	95%	$0.22	2	2
Wyoming	Health	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,178	10	$129	2.5%	94%	$0.02	0.27	0.27
Wyoming	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	6,208	4	$709	100%	N/A	$0.03	169	197
Wyoming	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	9,578	4	$709	95%	30%	$0.02	460	460
Wyoming	Large Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	6,208	4	$709	100%	N/A	$0.03	9	9
Wyoming	Large Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	9,578	4	$709	95%	30%	$0.02	52	52
Wyoming	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	2,978	15	$7,603	75%	94%	$0.30	72	72

Table C-2.2. Commercial Measure Details

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Wyoming	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	372	5	$5,180	95%	81%	$3.32	9	9
Wyoming	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	2,252	10	$23,917	25%	70%	$1.55	12	12
Wyoming	Large Office	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	1,489	15	$55,530	45%	45%	$4.37	9	9
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	1,202	20	$1,670	100%	N/A	$0.14	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	Existing	2,590	20	$3,597	100%	N/A	$0.14	5	8
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	Existing	4,903	20	$13,192	75%	N/A	$0.28	32	48
Wyoming	Large Office	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	8,936	15	$92,454	15%	67%	$1.21	27	27
Wyoming	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	2,978	15	$8,946	80%	98%	$0.35	70	70
Wyoming	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	2,383	7	$2,956	10%	94%	$0.23	6	6
Wyoming	Large Office	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	4,170	15	$264	65%	35%	$0.01	26	26
Wyoming	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	1,191	13	$2,140	75%	65%	$0.23	15	15
Wyoming	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	2,978	15	$5,322	75%	76%	$0.21	44	44
Wyoming	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	2,978	40	$58,922	2.0%	**%	$7.74	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,489	12	$987	10%	39%	$0.09	1	1
Wyoming	Large Office	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	48	25	$13,461	45%	57%	$27.77	0.30	0.30
Wyoming	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	10	25	$6,475	25%	85%	$62.37	0.05	0.05
Wyoming	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	69%	.	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,289	10%	85%	.	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,953	10%	68%	.	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WY State Code)	No Insulation	Per Building	Existing	446	15	$624	65%	45%	$0.16	3	3
Wyoming	Large Office	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,723	7	$5,995	90%	85%	$0.30	69	69
Wyoming	Large Office	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	3,862	10	$8,711	35%	68%	$0.33	20	20
Wyoming	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	4,207	25	$207	15%	90%	$0.00	12	12
Wyoming	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,609	25	$1,268	15%	70%	$0.03	10	10

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Wyoming	Large Office	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	1,785	15	$4,055	75%	94%	$0.27	4	4
Wyoming	Large Office	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	223	5	$5,180	95%	81%	$5.53	0.58	0.58
Wyoming	Large Office	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	1,350	10	$21,525	25%	70%	$2.33	0.71	0.71
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - High Efficiency	0.55 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	809	20	$1,503	100%	N/A	$0.19	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) - Premium Efficiency	0.52 kW/ton (full load)	0.576 kW/ton (full load)	Per Building	New	1,742	20	$3,237	100%	N/A	$0.19	0.73	0.74
Wyoming	Large Office	Cooling Chillers	Chillers >300 tons (centrifugal) with VSD - Advanced Efficiency	0.47 kW/ton w/VSD (full load)	0.576 kW/ton (full load)	Per Building	New	3,298	20	$11,804	75%	N/A	$0.37	4	4
Wyoming	Large Office	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	1,785	15	$8,946	80%	98%	$0.59	4	4
Wyoming	Large Office	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	1,428	7	$2,661	10%	94%	$0.35	0.40	0.40
Wyoming	Large Office	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	714	13	$1,926	75%	65%	$0.34	0.95	0.95
Wyoming	Large Office	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,785	15	$5,322	75%	76%	$0.35	2	2
Wyoming	Large Office	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	1,785	40	$58,922	2.0%	**%	$12.91	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	6	25	$6,475	75%	85%	$104.03	0.00	0.00
Wyoming	Large Office	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,785	15	$30,412	10%	75%	$2.00	0.32	0.32
Wyoming	Large Office	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	2,522	25	$207	80%	90%	$0.01	3	3
Wyoming	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	2,407	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	3,744	15	$8,598	100%	N/A	$0.27	0.00	0.00
Wyoming	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	30,332	15	$-58180.191	26%	N/A	$-0.22	15	21
Wyoming	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	1,617	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Office	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	2,515	15	$6,878	100%	N/A	$0.32	0.00	0.00

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Wyoming	Large Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	20,378	15	$-44342.126	26%	N/A	$-0.26	1	1
Wyoming	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	4,515	15	$7,603	75%	94%	$0.20	92	92
Wyoming	Large Office	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	13,547	15	$92,454	15%	67%	$0.80	36	36
Wyoming	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	4,515	15	$8,946	35%	98%	$0.23	40	40
Wyoming	Large Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	6,773	10	$17,244	10%	20%	$0.37	3	3
Wyoming	Large Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	4,515	5	$4,866	95%	72%	$0.26	78	78
Wyoming	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	11,289	15	$63,359	50%	94%	$0.66	124	124
Wyoming	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,515	15	$5,322	75%	76%	$0.14	53	53
Wyoming	Large Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,128	18	$7,299	45%	65%	$0.69	6	6
Wyoming	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	4,515	40	$58,922	2.0%	**%	$5.11	1	1
Wyoming	Large Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,257	12	$987	10%	39%	$0.06	1	1
Wyoming	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	73	25	$13,461	45%	57%	$18.32	0.36	0.36
Wyoming	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	15	25	$6,475	25%	85%	$41.14	0.06	0.06
Wyoming	Large Office	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,354	20	$5,291	45%	58%	$0.40	6	6
Wyoming	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	812	20	$928	45%	85%	$0.12	5	5
Wyoming	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$24,026	15%	69%	.	0.00	0.00
Wyoming	Large Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$7,412	15%	90%	.	0.00	0.00
Wyoming	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,289	10%	85%	.	0.00	0.00
Wyoming	Large Office	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,953	10%	68%	.	0.00	0.00
Wyoming	Large Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,644	7	$5,995	90%	85%	$0.20	82	82
Wyoming	Large Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	3,862	10	$8,711	35%	68%	$0.33	15	15
Wyoming	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	6,378	25	$207	15%	90%	$0.00	14	14
Wyoming	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	6,987	25	$1,268	15%	70%	$0.02	12	12
Wyoming	Large Office	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,957	15	$4,055	75%	94%	$0.16	5	5
Wyoming	Large Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,957	15	$8,946	35%	98%	$0.35	2	2

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	7,392	15	$63,359	50%	94%	$1.01	8	8
Wyoming	Large Office	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,957	15	$5,322	75%	76%	$0.21	3	3
Wyoming	Large Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,957	40	$58,922	2.0%	**%	$7.80	0.05	0.05
Wyoming	Large Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	10	25	$6,475	75%	85%	$62.83	0.00	0.00
Wyoming	Large Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	532	20	$928	45%	85%	$0.18	0.24	0.24
Wyoming	Large Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,957	15	$30,412	10%	75%	$1.21	0.43	0.43
Wyoming	Large Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	4,176	25	$207	80%	90%	$0.00	4	4
Wyoming	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	174	6	$3	100%	N/A	$0.00	29	29
Wyoming	Large Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	174	6	$3	100%	N/A	$0.00	3	3
Wyoming	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	838	4	$946	100%	N/A	$0.32	8	8
Wyoming	Large Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	838	4	$946	100%	N/A	$0.32	5	5
Wyoming	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	18	20	$2	100%	N/A	$0.01	0.00	0.00
Wyoming	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	49	20	$1	100%	N/A	$0.00	0.00	0.06
Wyoming	Large Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	347	20	$49	8.8%	100%	$0.01	5	5
Wyoming	Large Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	18	20	$2	100%	N/A	$0.01	0.00	0.00
Wyoming	Large Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	49	20	$1	100%	N/A	$0.00	0.00	0.03
Wyoming	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	14,801	15	$9,890	100%	N/A	$0.08	0.59	0.73
Wyoming	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	6,052	15	$7,603	75%	94%	$0.15	67	67
Wyoming	Large Office	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	69,401	15	$92,454	15%	67%	$0.16	108	108
Wyoming	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	6,052	15	$8,946	35%	98%	$0.17	31	31
Wyoming	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	23,133	15	$5,322	75%	76%	$0.03	195	195
Wyoming	Large Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,783	18	$7,299	45%	65%	$0.14	23	23
Wyoming	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	25,622	14	$27,584	5.0%	94%	$0.13	16	16
Wyoming	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	6,052	40	$58,922	2.0%	**%	$3.81	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	54,590	30	$12,668	5.0%	N/A	$1.06	0.00	0.00
Wyoming	Large Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	17,350	12	$987	10%	39%	$0.01	9	9
Wyoming	Large Office	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	19,861	25	$13,461	45%	57%	$0.07	70	70
Wyoming	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	4,253	25	$6,475	25%	85%	$0.15	12	12
Wyoming	Large Office	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	6,940	20	$5,291	45%	58%	$0.08	24	24
Wyoming	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	4,164	20	$928	45%	85%	$0.02	21	21
Wyoming	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	47,605	25	$24,026	15%	69%	$0.05	65	65
Wyoming	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	9,261	25	$7,412	15%	90%	$0.08	16	16
Wyoming	Large Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,289	10%	85%	.	0.00	0.00
Wyoming	Large Office	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,953	10%	68%	.	0.00	0.00
Wyoming	Large Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	28,917	7	$5,995	90%	85%	$0.04	286	286
Wyoming	Large Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	3,862	10	$8,711	35%	68%	$0.33	10	10
Wyoming	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	32,673	25	$207	15%	90%	$0.00	51	51
Wyoming	Large Office	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	35,795	25	$1,268	15%	70%	$0.00	42	42
Wyoming	Large Office	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	7,221	15	$7,912	100%	N/A	$0.13	0.00	0.00
Wyoming	Large Office	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	2,702	15	$4,055	75%	94%	$0.18	2	2
Wyoming	Large Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	2,702	15	$8,946	35%	98%	$0.39	1	1
Wyoming	Large Office	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	10,329	15	$5,322	75%	76%	$0.06	8	8
Wyoming	Large Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	11,441	14	$27,584	5.0%	94%	$0.29	0.77	0.77
Wyoming	Large Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	2,702	40	$58,922	2.0%	**%	$8.53	0.03	0.03
Wyoming	Large Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	27,430	30	$15,097	5.0%	N/A	$1.09	0.00	0.00
Wyoming	Large Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1,899	25	$6,475	75%	85%	$0.34	1	1
Wyoming	Large Office	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	1,859	20	$928	45%	85%	$0.05	0.60	0.60
Wyoming	Large Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	4,135	25	$7,412	35%	90%	$0.18	1	1
Wyoming	Large Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	10,329	15	$30,412	10%	75%	$0.35	1	1

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	14,589	25	$207	80%	90%	$0.00	10	10
Wyoming	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	2,848	8	$792	5.0%	95%	$0.05	27	27
Wyoming	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,361	8	$1,087	75%	70%	$0.05	353	353
Wyoming	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,791	15	$3,772	62%	90%	$0.16	313	313
Wyoming	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,194	8	$5,563	90%	42%	$0.79	69	69
Wyoming	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	61	13	$92	75%	95%	$0.19	8	8
Wyoming	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	27,705	17	$18,825	5.0%	95%	$0.07	264	264
Wyoming	Large Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	2,848	8	$792	5.0%	95%	$0.05	2	2
Wyoming	Large Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,361	8	$1,087	75%	70%	$0.05	36	36
Wyoming	Large Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,791	15	$3,772	62%	90%	$0.16	29	29
Wyoming	Large Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,194	8	$5,563	90%	42%	$0.79	7	7
Wyoming	Large Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	61	13	$92	75%	95%	$0.19	0.83	0.83
Wyoming	Large Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	27,705	17	$18,825	5.0%	95%	$0.07	22	22
Wyoming	Large Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	2,041	10	$2,531	75%	95%	$0.18	243	243
Wyoming	Large Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	5,794	8	$12,789	30%	78%	$0.38	223	223
Wyoming	Large Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,345	8	$9,592	30%	78%	$0.38	0.00	0.00
Wyoming	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,922	13	$1,874	100%	N/A	$0.06	0.00	0.00
Wyoming	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	5,371	13	$9,091	100%	N/A	$0.21	538	554
Wyoming	Large Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	11,913	13	$74,720	25%	N/A	$0.80	398	409
Wyoming	Large Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	7,858	8	$5,563	75%	42%	$0.12	398	398
Wyoming	Large Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	718	15	$435	100%	N/A	$0.07	0.00	0.00
Wyoming	Large Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	884	15	$1,813	95%	N/A	$0.24	52	53

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	788	25	$13,150	50%	N/A	$1.66	1	1
Wyoming	Large Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	501	17	$8	25%	N/A	$0.00	0.00	0.00
Wyoming	Large Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	249	15	$8,334	100%	N/A	$3.92	0.00	0.00
Wyoming	Large Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	287	8	$5,563	75%	42%	$3.29	16	16
Wyoming	Large Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	712	11	$277	95%	50%	$0.05	68	68
Wyoming	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	142	13	$122	95%	98%	$0.11	26	26
Wyoming	Large Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,833	10	$2,531	75%	95%	$0.20	22	22
Wyoming	Large Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,555	8	$12,789	30%	78%	$0.48	19	19
Wyoming	Large Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,416	8	$9,592	30%	78%	$0.48	0.00	0.00
Wyoming	Large Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	142	13	$122	95%	98%	$0.11	2	2
Wyoming	Large Office	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	9,169	13	$12,107	100%	N/A	$0.17	169	170
Wyoming	Large Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	7,060	8	$5,563	75%	42%	$0.13	39	39
Wyoming	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,203	4	$268	85%	N/A	$0.00	0.00	509
Wyoming	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,933	1	$177	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	4,497	1	$135	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,352	12	$3,343	15%	N/A	$0.02	17	286
Wyoming	Large Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,183	8	$5,563	75%	42%	$0.80	21	21
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	12	7	$3	10%	90%	$0.05	0.22	0.22
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	269	4	$0.00	75%	45%	$0.00	18	18
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	158	10	$0.77	95%	75%	$0.00	22	22

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	43	4	$4	5.0%	86%	$0.03	0.37	0.37
Wyoming	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	6,082	4	$1,216	60%	90%	$0.06	661	661
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	12	7	$3	10%	90%	$0.05	0.02	0.02
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	269	4	$0.00	75%	45%	$0.00	1	1
Wyoming	Large Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	158	10	$0.77	95%	75%	$0.00	2	2
Wyoming	Large Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	43	4	$4	5.0%	86%	$0.03	0.04	0.04
Wyoming	Large Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	6,082	4	$1,216	60%	90%	$0.06	71	71
Wyoming	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	545	6	$594	100%	N/A	$0.23	3	3
Wyoming	Large Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	545	6	$594	100%	N/A	$0.23	0.51	0.51
Wyoming	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	1,556	6	$181	100%	N/A	$0.02	27	27
Wyoming	Large Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	1,556	6	$181	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	608	20	$1,656	100%	N/A	$0.28	0.00	0.00
Wyoming	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	682	20	$2,220	100%	N/A	$0.33	25	30
Wyoming	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	535	20	$129	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	170	20	$59	100%	N/A	$0.04	0.00	0.00
Wyoming	Large Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	4,060	20	$453	8.8%	100%	$0.01	53	53
Wyoming	Large Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	608	20	$1,656	100%	N/A	$0.28	0.00	0.00
Wyoming	Large Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	682	20	$2,220	100%	N/A	$0.33	6	6
Wyoming	Large Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	535	20	$129	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	170	20	$59	100%	N/A	$0.04	0.00	0.00
Wyoming	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	547	9	$72	100%	N/A	$0.02	83	85
Wyoming	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	1,882	4	$7,056	10%	50%	$1.07	15	15
Wyoming	Large Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	547	9	$72	100%	N/A	$0.02	9	9
Wyoming	Large Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	1,875	4	$7,056	10%	50%	$1.07	1	1
Wyoming	Large Office	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	82,569	15	$92,454	15%	67%	$0.13	281	281
Wyoming	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	27,523	15	$5,322	75%	76%	$0.02	513	513
Wyoming	Large Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	6,880	18	$7,299	45%	65%	$0.11	62	62
Wyoming	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	41,284	14	$27,584	5.0%	94%	$0.08	59	59
Wyoming	Large Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	27,523	12	$987	10%	39%	$0.00	32	32

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Wyoming	Large Office	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	32,035	25	$13,461	45%	57%	$0.04	250	250
Wyoming	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	6,860	25	$6,475	25%	85%	$0.09	42	42
Wyoming	Large Office	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	8,256	20	$5,291	45%	58%	$0.07	63	63
Wyoming	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	4,954	20	$928	45%	85%	$0.02	55	55
Wyoming	Large Office	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	66,183	25	$24,026	15%	69%	$0.04	198	198
Wyoming	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	12,319	25	$7,412	15%	90%	$0.06	46	46
Wyoming	Large Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,289	10%	85%	.	0.00	0.00
Wyoming	Large Office	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,953	10%	68%	.	0.00	0.00
Wyoming	Large Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	34,404	7	$5,995	90%	85%	$0.03	739	739
Wyoming	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	38,872	25	$207	15%	90%	$0.00	132	132
Wyoming	Large Office	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	42,587	25	$1,268	15%	70%	$0.00	110	110
Wyoming	Large Office	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	12,134	15	$5,322	75%	76%	$0.05	22	22
Wyoming	Large Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	18,201	14	$27,584	5.0%	94%	$0.18	2	2
Wyoming	Large Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	3,024	25	$6,475	75%	85%	$0.21	3	3
Wyoming	Large Office	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	2,184	20	$928	45%	85%	$0.04	1	1
Wyoming	Large Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	5,431	25	$7,412	35%	90%	$0.14	3	3
Wyoming	Large Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	12,134	15	$30,412	10%	75%	$0.29	2	2
Wyoming	Large Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	17,138	25	$207	80%	90%	$0.00	24	24
Wyoming	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	1,043	10	$143	100%	N/A	$0.02	87	87
Wyoming	Large Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	1,043	10	$143	100%	N/A	$0.02	10	10
Wyoming	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	19,707	10	$3,728	5.0%	90%	$0.03	178	178
Wyoming	Large Office	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	29,560	15	$92,454	15%	67%	$0.37	594	594
Wyoming	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	1,005	15	$201	95%	76%	$0.02	139	139
Wyoming	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	25,126	20	$3,386	55%	45%	$0.01	1,194	1,194
Wyoming	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	5,173	15	$11,105	11%	77%	$0.25	78	78
Wyoming	Large Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	537	7	$152	65%	25%	$0.05	0.00	0.00

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Wyoming	Large Office	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	16,777	10	$3,728	5.0%	90%	$0.03	14	14
Wyoming	Large Office	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	27,371	50	$76,031	17%	98%	$0.24	51	51
Wyoming	Large Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	855	15	$201	95%	76%	$0.03	10	10
Wyoming	Large Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	21,391	20	$3,386	55%	45%	$0.02	57	57
Wyoming	Large Office	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	4,404	15	$11,105	11%	77%	$0.30	6	6
Wyoming	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	9,066	15	$1,531	75%	N/A	$0.02	0.02	2
Wyoming	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	8,968	15	$915	75%	N/A	$0.01	0.00	0.00
Wyoming	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,885	15	$1,531	75%	N/A	$0.02	0.00	0.50
Wyoming	Large Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	8,789	15	$915	75%	N/A	$0.01	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	760	10	$8,448	55%	80%	$1.62	0.80	0.80
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	95%	35%	$0.37	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	95%	35%	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	95%	55%	$0.41	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	95%	55%	$0.38	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	3,042	25	$3,800	2.5%	100%	$0.12	0.17	0.17
Wyoming	Large Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	152	12	$120	80%	30%	$0.11	0.08	0.08
Wyoming	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	242	9	$28	95%	25%	$0.02	0.13	0.13
Wyoming	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	0.37	0.37
Wyoming	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	0.25	0.25
Wyoming	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	380	10	$392	75%	85%	$0.15	0.58	0.58

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Wyoming	Large Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	738	10	$8,448	55%	80%	$1.67	0.05	0.05
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	95%	35%	$0.37	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	95%	35%	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	95%	55%	$0.41	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	95%	55%	$0.38	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,954	25	$3,040	2.5%	100%	$0.10	0.00	0.00
Wyoming	Large Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	235	9	$0.20	95%	25%	$0.00	0.01	0.01
Wyoming	Large Office	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	0.02	0.02
Wyoming	Large Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	369	10	$392	75%	85%	$0.16	0.04	0.04
Wyoming	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	8,257	15	$7,864	75%	N/A	$0.11	154	162
Wyoming	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	495	15	$343	100%	N/A	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	8,092	15	$7,864	75%	N/A	$0.11	22	23
Wyoming	Large Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	485	15	$343	100%	N/A	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	777	10	$8,448	75%	94%	$1.59	17	17
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$15	75%	35%	$0.37	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$0.70	75%	35%	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	9	12	$29	75%	55%	$0.41	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$14	75%	55%	$0.38	0.05	0.06
Wyoming	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	3,110	25	$3,800	2.5%	100%	$0.12	2	2

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Wyoming	Large Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	155	12	$120	80%	30%	$0.10	1	1
Wyoming	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	247	9	$28	95%	25%	$0.02	1	1
Wyoming	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	4	4
Wyoming	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	3	3
Wyoming	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	388	10	$392	75%	85%	$0.15	7	7
Wyoming	Large Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	740	10	$8,448	75%	94%	$1.67	1	1
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$15	75%	35%	$0.37	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$0.70	75%	35%	$0.08	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	9	12	$29	75%	55%	$0.41	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$14	75%	55%	$0.38	0.00	0.00
Wyoming	Large Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,963	25	$3,040	2.5%	100%	$0.10	0.06	0.06
Wyoming	Large Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	235	9	$0.20	95%	25%	$0.00	0.15	0.15
Wyoming	Large Office	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	0.41	0.41
Wyoming	Large Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	370	10	$392	75%	85%	$0.15	0.61	0.61
Wyoming	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	1,287	4	$147	100%	N/A	$0.03	30	30
Wyoming	Large Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	1,287	4	$147	100%	N/A	$0.03	1	1
Wyoming	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	2,979	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	4,635	15	$14,842	100%	N/A	$0.38	0.00	0.00
Wyoming	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	Existing	37,547	15	$-100434.36	26%	N/A	$-0.31	27	39
Wyoming	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency 10.5 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	2,221	15	$0.00	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Cooling DX Evap	DX Package 240 to 760 kBTU/hr - Premium Efficiency	DX Package 240 to 760 kBTU/hr - Premium Efficiency 10.8 EER	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	3,455	15	$11,874	100%	N/A	$0.40	0.00	0.00
Wyoming	Large Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	DX Package 240 to 760 kBTU/hr - Standard Efficiency 10.0 EER	Per Building	New	27,992	15	$-76546.21	26%	N/A	$-0.32	3	3
Wyoming	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	5,590	15	$8,750	25%	94%	$0.18	56	56
Wyoming	Large Retail	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	16,770	15	$6,400	15%	67%	$0.38	71	71
Wyoming	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	5,590	15	$8,902	80%	98%	$0.19	179	179
Wyoming	Large Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	8,385	10	$29,768	10%	80%	$0.52	25	25
Wyoming	Large Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	5,590	5	$8,400	95%	72%	$0.36	143	143
Wyoming	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	13,975	15	$72,916	50%	94%	$0.61	228	228
Wyoming	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	5,590	15	$6,125	75%	76%	$0.07	97	97
Wyoming	Large Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,397	18	$8,400	45%	65%	$0.33	11	11
Wyoming	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	5,590	40	$57,651	2.0%	**%	$4.10	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,795	12	$979	10%	39%	$0.02	3	3
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	215	25	$13,395	45%	69%	$0.12	1	1
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	19	25	$6,443	25%	85%	$0.47	0.11	0.11
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,677	20	$6,089	45%	58%	$0.19	12	12
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	1,006	20	$1,068	45%	85%	$0.06	10	10
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$23,908	15%	83%	.	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$7,376	15%	90%	.	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,204	10%	85%	.	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,717	10%	68%	.	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,987	7	$6,900	90%	85%	$0.09	151	151
Wyoming	Large Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	3,721	10	$8,641	35%	68%	$0.34	22	22
Wyoming	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	7,895	25	$205	15%	90%	$0.00	26	26
Wyoming	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	8,649	25	$1,258	15%	70%	$0.01	22	22

Table C-2.2. Commercial Measure Details

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Wyoming	Large Retail	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	4,061	15	$4,666	25%	94%	$0.13	3	3
Wyoming	Large Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	4,061	15	$8,902	80%	98%	$0.26	12	12
Wyoming	Large Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	10,154	15	$72,916	50%	94%	$0.84	17	17
Wyoming	Large Retail	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	4,061	15	$6,125	75%	76%	$0.10	7	7
Wyoming	Large Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	4,061	40	$57,651	2.0%	**%	$5.65	0.00	0.00
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	14	25	$6,443	75%	85%	$0.88	0.01	0.01
Wyoming	Large Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	731	20	$1,068	45%	85%	$0.09	0.51	0.51
Wyoming	Large Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	5,736	25	$205	80%	90%	$0.00	8	8
Wyoming	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	248	6	$5	100%	N/A	$0.00	30	30
Wyoming	Large Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	248	6	$5	100%	N/A	$0.00	3	3
Wyoming	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	173	4	$196	100%	N/A	$0.32	1	1
Wyoming	Large Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	173	4	$196	100%	N/A	$0.32	0.89	0.89
Wyoming	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	16	20	$2	100%	N/A	$0.01	0.00	0.00
Wyoming	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	44	20	$1	100%	N/A	$0.00	0.00	0.04
Wyoming	Large Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	314	20	$45	8.8%	100%	$0.01	3	3
Wyoming	Large Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	16	20	$2	100%	N/A	$0.01	0.00	0.00
Wyoming	Large Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	44	20	$1	100%	N/A	$0.00	0.00	0.02
Wyoming	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	13,287	15	$17,074	100%	N/A	$0.15	49	61
Wyoming	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	7,434	15	$8,750	25%	94%	$0.14	15	15
Wyoming	Large Retail	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	65,140	15	$6,400	15%	67%	$0.19	56	56
Wyoming	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	7,434	15	$8,902	80%	98%	$0.14	48	48
Wyoming	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	21,713	15	$6,125	75%	76%	$0.03	100	100
Wyoming	Large Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,428	18	$8,400	45%	65%	$0.17	12	12
Wyoming	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	21,418	14	$31,745	5.0%	94%	$0.18	7	7

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	7,434	40	$57,651	2.0%	**%	$3.09	0.00	0.00
Wyoming	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	50,443	30	$57,626	5.0%	N/A	$1.98	4	6
Wyoming	Large Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	16,285	12	$979	10%	39%	$0.01	4	4
Wyoming	Large Retail	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	28,043	25	$13,395	45%	69%	$0.05	65	65
Wyoming	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	3,564	25	$6,443	25%	85%	$0.18	5	5
Wyoming	Large Retail	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	6,514	20	$6,089	45%	58%	$0.10	12	12
Wyoming	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	3,908	20	$1,068	45%	85%	$0.03	10	10
Wyoming	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	38,828	25	$23,908	15%	83%	$0.06	34	34
Wyoming	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	7,561	25	$7,376	15%	90%	$0.10	7	7
Wyoming	Large Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,204	10%	85%	.	0.00	0.00
Wyoming	Large Retail	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,717	10%	68%	.	0.00	0.00
Wyoming	Large Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	27,141	7	$6,900	90%	85%	$0.05	145	145
Wyoming	Large Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	3,721	10	$8,641	35%	68%	$0.34	5	5
Wyoming	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	30,667	25	$205	15%	90%	$0.00	25	25
Wyoming	Large Retail	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	33,597	25	$1,258	15%	70%	$0.00	21	21
Wyoming	Large Retail	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	8,134	15	$13,659	100%	N/A	$0.20	4	4
Wyoming	Large Retail	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	4,149	15	$4,666	25%	94%	$0.13	0.82	0.83
Wyoming	Large Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	4,149	15	$8,902	80%	98%	$0.25	2	2
Wyoming	Large Retail	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	12,118	15	$6,125	75%	76%	$0.06	5	5
Wyoming	Large Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	11,954	14	$31,745	5.0%	94%	$0.32	0.43	0.43
Wyoming	Large Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	4,149	40	$57,651	2.0%	**%	$5.53	0.00	0.00
Wyoming	Large Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	31,601	30	$43,941	5.0%	N/A	$1.63	0.67	0.67
Wyoming	Large Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1,989	25	$6,443	75%	85%	$0.32	0.58	0.59
Wyoming	Large Retail	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	2,181	20	$1,068	45%	85%	$0.05	0.38	0.38
Wyoming	Large Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	4,220	25	$7,376	35%	90%	$0.17	0.60	0.60
Wyoming	Large Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	17,116	25	$205	80%	90%	$0.00	6	6

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	3,278	8	$912	5.0%	95%	$0.05	22	22
Wyoming	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	8,419	8	$1,084	75%	70%	$0.02	643	643
Wyoming	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	6,993	15	$9,449	62%	90%	$0.16	568	568
Wyoming	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,535	8	$6,402	45%	56%	$0.31	101	101
Wyoming	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	118	13	$176	75%	95%	$0.19	12	12
Wyoming	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	31,885	17	$21,665	5.0%	95%	$0.07	220	220
Wyoming	Large Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	3,278	8	$912	5.0%	95%	$0.05	2	2
Wyoming	Large Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	8,419	8	$1,084	75%	70%	$0.02	66	66
Wyoming	Large Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	6,993	15	$9,449	62%	90%	$0.16	53	53
Wyoming	Large Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,535	8	$6,402	45%	56%	$0.31	10	10
Wyoming	Large Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	118	13	$176	75%	95%	$0.19	1	1
Wyoming	Large Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	31,885	17	$21,665	5.0%	95%	$0.07	18	18
Wyoming	Large Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	4,076	10	$2,913	5.0%	95%	$0.10	22	22
Wyoming	Large Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	10,774	8	$12,758	5.0%	84%	$0.20	53	53
Wyoming	Large Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	8,080	8	$9,568	5.0%	84%	$0.20	40	40
Wyoming	Large Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	846	6	$314	10%	80%	$0.08	8	8
Wyoming	Large Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	634	6	$322	5.0%	80%	$0.11	3	3
Wyoming	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	15,487	13	$14,850	100%	N/A	$0.12	1,143	1,148
Wyoming	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	10,855	13	$5,283	100%	N/A	$0.06	0.00	0.00
Wyoming	Large Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	25,838	13	$31,908	25%	N/A	$0.65	609	612
Wyoming	Large Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	18,549	8	$6,402	5.0%	56%	$0.06	61	61
Wyoming	Large Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,284	15	$2,425	100%	N/A	$0.05	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	7,718	15	$10,198	95%	N/A	$0.15	337	338
Wyoming	Large Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	6,895	16	$74,079	50%	N/A	$1.22	13	13
Wyoming	Large Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	4,390	11	$18	25%	N/A	$0.00	0.00	0.00
Wyoming	Large Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,183	15	$46,943	100%	N/A	$2.52	0.00	0.00
Wyoming	Large Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,922	8	$6,402	5.0%	56%	$0.37	11	11
Wyoming	Large Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	3,078	11	$1,198	95%	50%	$0.05	212	212
Wyoming	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	615	13	$527	95%	98%	$0.11	83	83
Wyoming	Large Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	4,906	10	$2,913	5.0%	95%	$0.09	2	2
Wyoming	Large Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	9,034	8	$12,758	5.0%	84%	$0.24	4	4
Wyoming	Large Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	6,775	8	$9,568	5.0%	84%	$0.24	3	3
Wyoming	Large Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	654	6	$160	10%	80%	$0.05	0.70	0.70
Wyoming	Large Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	361	6	$140	10%	80%	$0.08	0.38	0.38
Wyoming	Large Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	615	13	$527	95%	98%	$0.11	7	7
Wyoming	Large Retail	Lighting Interior Other	Lighting Package, High Efficiency	13% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	31,893	13	$74,347	100%	N/A	$0.30	444	445
Wyoming	Large Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	22,325	8	$6,402	5.0%	56%	$0.05	8	8
Wyoming	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	73,745	4	$701	85%	N/A	$0.00	0.00	1,491
Wyoming	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	64,549	1	$464	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	18,218	1	$353	100%	N/A	$0.00	0.00	0.00
Wyoming	Large Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	74,349	12	$8,740	15%	N/A	$0.02	55	842

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Wyoming	Large Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	5,667	8	$6,402	5.0%	56%	$0.19	6	6
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	15	7	$4	10%	90%	$0.05	0.20	0.20
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	382	4	$0.00	10%	45%	$0.00	2	2
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	42	10	$0.20	95%	75%	$0.00	4	4
Wyoming	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	54	4	$5	5.0%	86%	$0.03	0.33	0.33
Wyoming	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	700	4	$140	60%	90%	$0.06	55	55
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	15	7	$4	10%	90%	$0.05	0.02	0.02
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	382	4	$0.00	10%	45%	$0.00	0.27	0.27
Wyoming	Large Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	42	10	$0.20	95%	75%	$0.00	0.41	0.41
Wyoming	Large Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	54	4	$5	5.0%	86%	$0.03	0.03	0.03
Wyoming	Large Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	700	4	$140	60%	90%	$0.06	5	5
Wyoming	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	775	6	$844	100%	N/A	$0.23	3	3
Wyoming	Large Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	775	6	$844	100%	N/A	$0.23	0.52	0.52
Wyoming	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	495	6	$57	100%	N/A	$0.02	6	6
Wyoming	Large Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	495	6	$57	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	552	20	$1,502	100%	N/A	$0.28	0.00	0.00
Wyoming	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	619	20	$2,014	100%	N/A	$0.33	16	20
Wyoming	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	485	20	$117	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	154	20	$53	100%	N/A	$0.04	0.00	0.00
Wyoming	Large Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	3,682	20	$411	8.8%	100%	$0.01	34	34
Wyoming	Large Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	552	20	$1,502	100%	N/A	$0.28	0.00	0.00
Wyoming	Large Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	619	20	$2,014	100%	N/A	$0.33	4	4
Wyoming	Large Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	485	20	$117	100%	N/A	$0.02	0.00	0.00
Wyoming	Large Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	154	20	$53	100%	N/A	$0.04	0.00	0.00
Wyoming	Large Retail	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	64,365	15	$6,400	15%	67%	$0.15	73	73
Wyoming	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	21,455	15	$6,125	75%	76%	$0.03	134	134
Wyoming	Large Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	5,363	18	$8,400	45%	65%	$0.13	16	16

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Wyoming	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	32,182	14	$31,745	5.0%	94%	$0.12	15	15
Wyoming	Large Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	21,455	12	$979	10%	39%	$0.01	8	8
Wyoming	Large Retail	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	42,211	25	$13,395	45%	69%	$0.03	133	133
Wyoming	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	5,348	25	$6,443	25%	85%	$0.12	10	10
Wyoming	Large Retail	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	6,436	20	$6,089	45%	58%	$0.08	16	16
Wyoming	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	3,861	20	$1,068	45%	85%	$0.02	13	13
Wyoming	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	51,591	25	$23,908	15%	83%	$0.05	60	60
Wyoming	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	9,603	25	$7,376	15%	90%	$0.08	11	11
Wyoming	Large Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$17,204	10%	85%	.	0.00	0.00
Wyoming	Large Retail	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$47,717	10%	68%	.	0.00	0.00
Wyoming	Large Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	26,818	7	$6,900	90%	85%	$0.04	186	186
Wyoming	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	30,302	25	$205	15%	90%	$0.00	33	33
Wyoming	Large Retail	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	33,197	25	$1,258	15%	70%	$0.00	27	27
Wyoming	Large Retail	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	11,480	15	$6,125	75%	76%	$0.05	7	7
Wyoming	Large Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	17,220	14	$31,745	5.0%	94%	$0.22	0.82	0.82
Wyoming	Large Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	2,861	25	$6,443	75%	85%	$0.22	1	1
Wyoming	Large Retail	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	2,066	20	$1,068	45%	85%	$0.04	0.47	0.47
Wyoming	Large Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	5,138	25	$7,376	35%	90%	$0.14	0.96	0.96
Wyoming	Large Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	16,213	25	$205	80%	90%	$0.00	7	7
Wyoming	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	2,618	10	$359	100%	N/A	$0.02	158	158
Wyoming	Large Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	2,618	10	$359	100%	N/A	$0.02	19	19
Wyoming	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	15,960	10	$4,291	5.0%	90%	$0.04	104	104
Wyoming	Large Retail	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	23,940	15	$6,400	15%	67%	$0.52	348	348
Wyoming	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	466	18	$1,125	95%	65%	$0.26	41	41
Wyoming	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	813	15	$231	95%	76%	$0.03	81	81
Wyoming	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	20,349	20	$3,897	55%	45%	$0.02	696	696

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Wyoming	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	4,189	15	$12,780	5.0%	77%	$0.36	20	20
Wyoming	Large Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	618	7	$175	65%	25%	$0.05	0.00	0.00
Wyoming	Large Retail	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	13,230	10	$4,291	5.0%	90%	$0.05	8	8
Wyoming	Large Retail	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	466	18	$1,125	95%	65%	$0.26	3	3
Wyoming	Large Retail	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	26,250	50	$87,500	8.0%	98%	$0.29	16	16
Wyoming	Large Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	674	15	$231	95%	76%	$0.04	6	6
Wyoming	Large Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	16,868	20	$3,897	55%	45%	$0.02	33	33
Wyoming	Large Retail	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	3,472	15	$12,780	5.0%	77%	$0.43	1	1
Wyoming	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	5,008	15	$1,450	75%	N/A	$0.03	0.01	1
Wyoming	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	4,954	15	$867	75%	N/A	$0.02	0.00	0.00
Wyoming	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	4,799	15	$1,450	75%	N/A	$0.04	0.00	0.28
Wyoming	Large Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	4,747	15	$867	75%	N/A	$0.02	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	420	10	$9,723	75%	94%	$3.38	0.74	0.74
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.37	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.41	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.38	0.01	0.01
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	18	12	$10	20%	95%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	17	12	$10	20%	94%	$0.08	0.00	0.00

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Wyoming	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,680	25	$3,600	2.5%	100%	$0.21	0.10	0.10
Wyoming	Large Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	84	12	$114	80%	90%	$0.18	0.14	0.14
Wyoming	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	133	9	$28	95%	25%	$0.03	0.07	0.07
Wyoming	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.09	0.03	0.03
Wyoming	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	210	10	$392	75%	95%	$0.27	0.37	0.37
Wyoming	Large Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	399	10	$9,723	75%	94%	$3.56	0.05	0.05
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.37	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.41	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.38	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	17	12	$10	20%	95%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	16	12	$10	20%	94%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,596	25	$2,880	2.5%	100%	$0.18	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	126	9	$0.20	95%	25%	$0.00	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.09	0.00	0.00
Wyoming	Large Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	199	10	$392	75%	95%	$0.29	0.02	0.02
Wyoming	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	4,561	15	$7,450	75%	N/A	$0.19	91	94
Wyoming	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	273	15	$325	100%	N/A	$0.14	0.00	0.00
Wyoming	Large Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	4,371	15	$7,450	75%	N/A	$0.20	13	13
Wyoming	Large Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	262	15	$325	100%	N/A	$0.15	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	429	10	$9,723	25%	94%	$3.30	3	3
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	19	12	$53	75%	35%	$0.37	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	3	12	$2	75%	35%	$0.08	0.02	0.03
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	33	12	$103	75%	55%	$0.41	0.00	0.02
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	18	12	$51	75%	55%	$0.38	0.20	0.23
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	18	12	$10	0.0%	95%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	17	12	$10	0.0%	95%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	1,718	25	$3,600	2.5%	100%	$0.21	1	1
Wyoming	Large Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	85	12	$114	80%	90%	$0.18	2	2
Wyoming	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	136	9	$28	95%	25%	$0.03	1	1
Wyoming	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	17	4	$5	95%	83%	$0.09	0.44	0.44
Wyoming	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	214	10	$392	75%	95%	$0.27	5	5
Wyoming	Large Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	400	10	$9,723	25%	94%	$3.55	0.25	0.25
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	19	12	$53	75%	35%	$0.37	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	3	12	$2	75%	35%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	33	12	$103	75%	55%	$0.41	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	18	12	$51	75%	55%	$0.38	0.01	0.01
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	17	12	$10	0.0%	95%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Large Retail	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	16	12	$10	0.0%	95%	$0.08	0.00	0.00
Wyoming	Large Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	1,600	25	$2,880	2.5%	100%	$0.18	0.03	0.03
Wyoming	Large Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	127	9	$0.20	95%	25%	$0.00	0.08	0.08
Wyoming	Large Retail	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	17	4	$5	95%	83%	$0.09	0.04	0.04
Wyoming	Large Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	200	10	$392	75%	95%	$0.29	0.38	0.38
Wyoming	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	547	4	$62	100%	N/A	$0.03	81	81
Wyoming	Lodging	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	547	4	$62	100%	N/A	$0.03	4	4
Wyoming	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	151	12	$25	90%	90%	$0.02	0.00	0.00
Wyoming	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	13	12	$35	55%	90%	$0.35	0.00	0.00
Wyoming	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	65	12	$15	95%	85%	$0.03	0.00	0.00
Wyoming	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	113	12	$64	19%	55%	$0.08	0.00	0.00
Wyoming	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	184	12	$118	55%	21%	$0.08	0.00	0.00
Wyoming	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	319	12	$179	11%	75%	$0.07	0.00	0.00
Wyoming	Lodging	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	151	12	$25	90%	90%	$0.02	0.00	0.00
Wyoming	Lodging	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	13	12	$35	55%	90%	$0.35	0.00	0.00
Wyoming	Lodging	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	65	12	$15	95%	85%	$0.03	0.00	0.00
Wyoming	Lodging	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	113	12	$64	19%	55%	$0.08	0.00	0.00
Wyoming	Lodging	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	184	12	$118	55%	21%	$0.08	0.00	0.00
Wyoming	Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	319	12	$179	11%	75%	$0.07	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	191	15	$1,692	50%	94%	$1.04	9	9
Wyoming	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	119	5	$1,153	95%	81%	$2.30	9	9
Wyoming	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	722	10	$5,324	25%	70%	$1.08	12	12
Wyoming	Lodging	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	477	15	$12,361	45%	30%	$3.03	6	6

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Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	2,004	20	$3,965	100%	N/A	$0.20	70	92
Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	668	20	$1,321	100%	N/A	$0.20	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,490	20	$2,948	100%	N/A	$0.20	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	955	15	$2,369	45%	98%	$0.29	42	42
Wyoming	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	764	7	$658	10%	94%	$0.16	6	6
Wyoming	Lodging	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	1,337	15	$58	65%	35%	$0.01	29	29
Wyoming	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	382	13	$476	75%	65%	$0.16	17	17
Wyoming	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	955	15	$1,184	75%	76%	$0.05	49	49
Wyoming	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	430	12	$5,450	10%	75%	$0.60	2	2
Wyoming	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	955	40	$68,580	2.0%	**%	$6.39	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	477	12	$361	10%	39%	$0.02	1	1
Wyoming	Lodging	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	15	25	$3,565	45%	63%	$0.17	0.37	0.37
Wyoming	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	3	25	$1,715	25%	85%	$0.39	0.05	0.05
Wyoming	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,363	15%	76%	.	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,963	15%	90%	.	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$4,579	10%	85%	.	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$12,701	10%	68%	.	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WY State Code)	No Insulation	Per Building	Existing	143	15	$139	65%	45%	$0.11	3	3
Wyoming	Lodging	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,194	7	$1,334	90%	85%	$0.07	77	77
Wyoming	Lodging	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	1,857	10	$3,185	35%	68%	$0.25	33	33
Wyoming	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,349	25	$75	15%	90%	$0.00	13	13
Wyoming	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,478	25	$463	15%	66%	$0.01	10	10
Wyoming	Lodging	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	88	15	$902	50%	94%	$1.20	0.40	0.40
Wyoming	Lodging	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	55	5	$1,153	95%	81%	$4.98	0.46	0.46

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	334	10	$4,791	25%	70%	$2.09	0.56	0.56
Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	1,119	20	$3,568	100%	N/A	$0.33	7	7
Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	373	20	$1,189	100%	N/A	$0.33	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	832	20	$2,653	100%	N/A	$0.33	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	441	15	$2,369	45%	98%	$0.63	1	1
Wyoming	Lodging	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	353	7	$592	10%	94%	$0.31	0.33	0.33
Wyoming	Lodging	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	176	13	$428	75%	65%	$0.31	0.78	0.78
Wyoming	Lodging	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	441	15	$1,184	75%	76%	$0.08	2	2
Wyoming	Lodging	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	198	12	$5,450	10%	75%	$0.93	0.12	0.12
Wyoming	Lodging	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	441	40	$68,580	2.0%	**%	$13.82	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,715	75%	85%	$0.53	0.00	0.00
Wyoming	Lodging	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	441	15	$6,770	10%	75%	$0.46	0.26	0.26
Wyoming	Lodging	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	624	25	$75	80%	90%	$0.00	2	2
Wyoming	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	286	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	730	15	$614	100%	N/A	$0.10	0.00	0.00
Wyoming	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	6,052	15	$-12866.682	26%	N/A	$-0.25	23	35
Wyoming	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	160	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Lodging	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	411	15	$491	100%	N/A	$0.14	0.00	0.00
Wyoming	Lodging	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,406	15	$-9380.3777	26%	N/A	$-0.32	2	2
Wyoming	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	209	15	$1,692	50%	94%	$0.95	23	23
Wyoming	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,047	15	$2,369	45%	98%	$0.27	108	108

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,570	10	$3,838	10%	30%	$0.36	10	10
Wyoming	Lodging	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	1,047	5	$1,083	95%	72%	$0.25	160	160
Wyoming	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,618	15	$14,104	50%	94%	$0.63	256	256
Wyoming	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,047	15	$1,184	75%	76%	$0.05	109	109
Wyoming	Lodging	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	261	18	$1,624	45%	65%	$0.25	13	13
Wyoming	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	471	12	$5,450	10%	75%	$0.58	6	6
Wyoming	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,047	40	$68,580	2.0%	**%	$5.83	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	2,354	15	$2,624	60%	97%	$0.13	233	233
Wyoming	Lodging	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	523	12	$361	10%	39%	$0.02	3	3
Wyoming	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	16	25	$3,565	45%	63%	$0.17	0.71	0.71
Wyoming	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	3	25	$1,715	25%	85%	$0.39	0.11	0.11
Wyoming	Lodging	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	314	20	$1,177	45%	59%	$0.14	12	12
Wyoming	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	188	20	$206	45%	85%	$0.04	10	10
Wyoming	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,363	15%	76%	.	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,963	15%	90%	.	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$4,579	10%	85%	.	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$12,701	10%	68%	.	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,309	7	$1,334	90%	85%	$0.07	147	147
Wyoming	Lodging	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	1,857	10	$3,185	35%	68%	$0.25	58	58
Wyoming	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,479	25	$75	15%	90%	$0.00	25	25
Wyoming	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,620	25	$463	15%	66%	$0.01	19	19
Wyoming	Lodging	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	108	15	$902	50%	94%	$0.97	1	1
Wyoming	Lodging	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	544	15	$2,369	45%	98%	$0.51	5	5
Wyoming	Lodging	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,360	15	$14,104	50%	94%	$1.22	13	13
Wyoming	Lodging	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	544	15	$1,184	75%	76%	$0.08	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	244	12	$5,450	10%	75%	$0.88	0.34	0.34
Wyoming	Lodging	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	544	40	$68,580	2.0%	**%	$11.23	0.00	0.00
Wyoming	Lodging	Cooling Dx Evap	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	1,223	15	$2,624	60%	97%	$0.25	12	12
Wyoming	Lodging	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,715	75%	85%	$0.53	0.01	0.01
Wyoming	Lodging	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	97	20	$206	45%	85%	$0.06	0.35	0.35
Wyoming	Lodging	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	544	15	$6,770	10%	75%	$0.43	0.62	0.62
Wyoming	Lodging	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	768	25	$75	80%	90%	$0.00	6	6
Wyoming	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,183	15	$2,369	45%	98%	$0.23	101	101
Wyoming	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	1,183	15	$1,184	75%	76%	$0.05	124	124
Wyoming	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	532	12	$5,450	10%	75%	$0.55	7	7
Wyoming	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,183	40	$68,580	2.0%	**%	$5.16	0.00	0.00
Wyoming	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	2,660	15	$2,624	60%	97%	$0.12	269	269
Wyoming	Lodging	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	591	12	$361	10%	39%	$0.02	3	3
Wyoming	Lodging	Cooling Room	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	19	25	$3,565	45%	63%	$0.17	0.82	0.82
Wyoming	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	4	25	$1,715	25%	85%	$0.39	0.13	0.13
Wyoming	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$6,363	15%	76%	.	0.00	0.00
Wyoming	Lodging	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,963	15%	90%	.	0.00	0.00
Wyoming	Lodging	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$4,579	10%	85%	.	0.00	0.00
Wyoming	Lodging	Cooling Room	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$12,701	10%	68%	.	0.00	0.00
Wyoming	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	1,040	9	$893	50%	N/A	$0.13	60	75
Wyoming	Lodging	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	1,857	10	$3,185	35%	68%	$0.25	67	67
Wyoming	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,670	25	$75	15%	90%	$0.00	32	32
Wyoming	Lodging	Cooling Room	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,830	25	$463	15%	66%	$0.01	25	25
Wyoming	Lodging	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	638	15	$2,369	45%	98%	$0.43	5	5
Wyoming	Lodging	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	638	15	$1,184	75%	76%	$0.07	6	6

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	287	12	$5,450	10%	75%	$0.83	0.36	0.36
Wyoming	Lodging	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	638	40	$68,580	2.0%	**%	$9.56	0.00	0.00
Wyoming	Lodging	Cooling Room	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	1,436	15	$2,624	60%	97%	$0.21	13	13
Wyoming	Lodging	Cooling Room	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	2	25	$1,715	75%	85%	$0.53	0.01	0.01
Wyoming	Lodging	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	638	15	$6,770	10%	75%	$0.41	0.67	0.67
Wyoming	Lodging	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	563	9	$714	50%	N/A	$0.20	3	3
Wyoming	Lodging	Cooling Room	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	902	25	$75	80%	90%	$0.00	6	6
Wyoming	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	16	6	$0.36	100%	N/A	$0.00	13	13
Wyoming	Lodging	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	16	6	$0.36	100%	N/A	$0.00	1	1
Wyoming	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	74	4	$83	100%	N/A	$0.32	3	3
Wyoming	Lodging	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	74	4	$83	100%	N/A	$0.32	2	2
Wyoming	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	7	20	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	20	20	$0.53	100%	N/A	$0.00	0.00	0.12
Wyoming	Lodging	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	141	20	$20	8.8%	100%	$0.01	9	9
Wyoming	Lodging	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	7	20	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Lodging	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	20	20	$0.53	100%	N/A	$0.00	0.00	0.06
Wyoming	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,446	15	$2,287	100%	N/A	$0.19	0.00	0.00
Wyoming	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,194	15	$4,574	100%	N/A	$0.10	255	333
Wyoming	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	216	15	$1,692	50%	94%	$0.92	12	12
Wyoming	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,083	15	$2,369	45%	98%	$0.26	56	56
Wyoming	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	4,716	15	$1,184	75%	76%	$0.03	312	312
Wyoming	Lodging	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,179	18	$1,624	45%	65%	$0.15	38	38
Wyoming	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,450	14	$11,644	5.0%	94%	$0.26	28	28

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,122	12	$5,450	10%	75%	$0.34	17	17
Wyoming	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,083	40	$68,580	2.0%	**%	$5.64	0.00	0.00
Wyoming	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	9,322	30	$35,597	5.0%	N/A	$1.38	13	21
Wyoming	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	10,605	15	$2,624	60%	97%	$0.03	665	665
Wyoming	Lodging	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,537	12	$361	10%	39%	$0.01	12	12
Wyoming	Lodging	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,221	25	$3,565	45%	63%	$0.08	112	112
Wyoming	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	904	25	$1,715	25%	85%	$0.19	17	17
Wyoming	Lodging	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,415	20	$1,177	45%	59%	$0.09	34	34
Wyoming	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	849	20	$206	45%	85%	$0.02	29	29
Wyoming	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	14,229	25	$6,363	15%	76%	$0.04	145	145
Wyoming	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,985	25	$1,963	15%	90%	$0.10	23	23
Wyoming	Lodging	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$4,579	10%	85%	.	0.00	0.00
Wyoming	Lodging	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$12,701	10%	68%	.	0.00	0.00
Wyoming	Lodging	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	5,895	7	$1,334	90%	85%	$0.04	390	390
Wyoming	Lodging	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	1,857	10	$3,185	35%	68%	$0.25	34	34
Wyoming	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	6,661	25	$75	15%	90%	$0.00	69	69
Wyoming	Lodging	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	7,298	25	$463	15%	66%	$0.01	54	54
Wyoming	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	963	15	$1,829	100%	N/A	$0.22	0.00	0.00
Wyoming	Lodging	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	3,605	15	$3,659	100%	N/A	$0.12	27	29
Wyoming	Lodging	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	135	15	$902	50%	94%	$0.78	0.73	0.73
Wyoming	Lodging	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	678	15	$2,369	45%	98%	$0.41	3	3
Wyoming	Lodging	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,952	15	$1,184	75%	76%	$0.05	18	19
Wyoming	Lodging	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	3,411	14	$11,644	5.0%	94%	$0.42	1	1
Wyoming	Lodging	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,328	12	$5,450	10%	75%	$0.55	1	1

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	678	40	$68,580	2.0%	**%	$9.01	0.00	0.00
Wyoming	Lodging	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	6,127	30	$69,653	5.0%	N/A	$1.07	1	1
Wyoming	Lodging	Heat Pump	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	6,638	15	$2,624	60%	97%	$0.05	39	39
Wyoming	Lodging	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	565	25	$1,715	75%	85%	$0.30	2	2
Wyoming	Lodging	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	531	20	$206	45%	85%	$0.04	1	1
Wyoming	Lodging	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,242	25	$1,963	35%	90%	$0.16	2	2
Wyoming	Lodging	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,952	15	$6,770	10%	75%	$0.27	1	1
Wyoming	Lodging	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	4,170	25	$75	80%	90%	$0.00	18	18
Wyoming	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	634	8	$176	5.0%	95%	$0.05	27	27
Wyoming	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	968	8	$559	75%	70%	$0.10	465	465
Wyoming	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	804	15	$1,086	62%	90%	$0.16	412	412
Wyoming	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	703	8	$1,238	90%	55%	$0.30	251	251
Wyoming	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	65	13	$98	75%	95%	$0.19	43	43
Wyoming	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	6,167	17	$4,190	5.0%	95%	$0.07	269	269
Wyoming	Lodging	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	634	8	$176	5.0%	95%	$0.05	2	2
Wyoming	Lodging	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	968	8	$559	75%	70%	$0.10	48	48
Wyoming	Lodging	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	804	15	$1,086	62%	90%	$0.16	39	39
Wyoming	Lodging	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	703	8	$1,238	90%	55%	$0.30	25	25
Wyoming	Lodging	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	65	13	$98	75%	95%	$0.19	4	4
Wyoming	Lodging	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	6,167	17	$4,190	5.0%	95%	$0.07	22	22
Wyoming	Lodging	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	156	10	$563	25%	95%	$0.52	28	28
Wyoming	Lodging	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	953	8	$6,582	5.0%	92%	$1.17	32	32
Wyoming	Lodging	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	715	8	$4,936	5.0%	92%	$1.17	24	24
Wyoming	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	362	13	$568	100%	N/A	$0.20	158	160

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	301	13	$-58.195776	100%	N/A	$-0.02	0.00	0.00
Wyoming	Lodging	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	789	13	$6,660	25%	N/A	$1.07	103	105
Wyoming	Lodging	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,235	8	$1,238	5.0%	55%	$0.17	25	25
Wyoming	Lodging	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	49	15	$33	100%	N/A	$0.08	0.00	0.00
Wyoming	Lodging	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	61	15	$145	95%	N/A	$0.28	16	16
Wyoming	Lodging	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	54	29	$1,065	50%	N/A	$1.86	0.52	0.52
Wyoming	Lodging	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	34	20	$-1.4439933	25%	N/A	$-0.00	0.00	0.00
Wyoming	Lodging	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	17	15	$674	100%	N/A	$4.51	0.00	0.00
Wyoming	Lodging	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	39	8	$1,238	5.0%	55%	$5.35	0.95	0.95
Wyoming	Lodging	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	151	11	$58	95%	50%	$0.05	65	65
Wyoming	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	30	13	$25	95%	98%	$0.11	25	25
Wyoming	Lodging	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	345	10	$563	25%	95%	$0.24	5	5
Wyoming	Lodging	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	715	8	$6,582	5.0%	92%	$1.57	2	2
Wyoming	Lodging	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	536	8	$4,936	5.0%	92%	$1.57	1	1
Wyoming	Lodging	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	30	13	$25	95%	98%	$0.11	2	2
Wyoming	Lodging	Lighting Interior Other	Lighting Package, High Efficiency	20% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,454	13	$5,327	100%	N/A	$0.20	302	303
Wyoming	Lodging	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,720	8	$1,238	5.0%	55%	$0.08	5	5
Wyoming	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	36,590	4	$644	85%	N/A	$0.01	0.00	1,282
Wyoming	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	32,009	1	$426	100%	N/A	$0.00	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	8,522	1	$332	100%	N/A	$0.00	0.00	0.00
Wyoming	Lodging	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	36,893	12	$7,994	15%	N/A	$0.03	202	1,782
Wyoming	Lodging	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,658	8	$1,238	5.0%	55%	$0.06	35	35
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$1	10%	90%	$0.05	0.31	0.31
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	25	4	$0.00	25%	45%	$0.00	2	2
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	10	10	$0.05	95%	75%	$0.00	6	6
Wyoming	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	746	10	$527	95%	86%	$0.10	557	557
Wyoming	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	13	4	$1	5.0%	86%	$0.02	0.52	0.52
Wyoming	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	169	4	$33	60%	90%	$0.06	83	83
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$1	10%	90%	$0.05	0.03	0.03
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	25	4	$0.00	25%	45%	$0.00	0.28	0.28
Wyoming	Lodging	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	10	10	$0.05	95%	75%	$0.00	0.63	0.63
Wyoming	Lodging	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	746	10	$527	95%	86%	$0.10	53	53
Wyoming	Lodging	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	13	4	$1	5.0%	86%	$0.02	0.05	0.05
Wyoming	Lodging	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	169	4	$33	60%	90%	$0.06	9	9
Wyoming	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	52	6	$56	100%	N/A	$0.23	1	1
Wyoming	Lodging	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	52	6	$56	100%	N/A	$0.23	0.22	0.22
Wyoming	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	57	6	$6	100%	N/A	$0.02	4	4
Wyoming	Lodging	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	57	6	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	464	10	$385	5.0%	80%	$0.12	1	1
Wyoming	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	631	10	$522	5.0%	80%	$0.12	2	2
Wyoming	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	13	10	$2	1.0%	85%	$0.03	0.01	0.01
Wyoming	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	24	15	$21	0.0%	95%	$0.11	0.00	0.00
Wyoming	Lodging	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	464	10	$385	5.0%	80%	$0.12	0.17	0.17

Table C-2.2. Commercial Measure Details

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Wyoming	Lodging	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	631	10	$522	5.0%	80%	$0.12	0.24	0.24
Wyoming	Lodging	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	13	10	$2	1.0%	85%	$0.03	0.00	0.00
Wyoming	Lodging	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	24	15	$21	0.0%	95%	$0.11	0.00	0.00
Wyoming	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	247	20	$674	100%	N/A	$0.28	0.00	0.00
Wyoming	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	278	20	$904	100%	N/A	$0.33	47	57
Wyoming	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	217	20	$52	100%	N/A	$0.02	0.00	0.00
Wyoming	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	69	20	$24	100%	N/A	$0.04	0.00	0.00
Wyoming	Lodging	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,653	20	$184	8.8%	100%	$0.01	99	99
Wyoming	Lodging	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	247	20	$674	100%	N/A	$0.28	0.00	0.00
Wyoming	Lodging	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	278	20	$904	100%	N/A	$0.33	12	12
Wyoming	Lodging	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	217	20	$52	100%	N/A	$0.02	0.00	0.00
Wyoming	Lodging	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	69	20	$24	100%	N/A	$0.04	0.00	0.00
Wyoming	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	5,206	15	$1,184	75%	76%	$0.03	599	599
Wyoming	Lodging	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,301	18	$1,624	45%	65%	$0.13	73	73
Wyoming	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	7,809	14	$11,644	5.0%	94%	$0.18	69	69
Wyoming	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	2,342	12	$5,450	10%	75%	$0.29	33	33
Wyoming	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	Existing	11,705	15	$2,624	60%	97%	$0.03	1,272	1,272
Wyoming	Lodging	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	5,206	12	$361	10%	39%	$0.01	32	32
Wyoming	Lodging	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,059	25	$3,565	45%	63%	$0.06	278	278
Wyoming	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1,297	25	$1,715	25%	85%	$0.13	43	43
Wyoming	Lodging	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,561	20	$1,177	45%	59%	$0.07	65	65
Wyoming	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	937	20	$206	45%	85%	$0.02	55	55
Wyoming	Lodging	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	18,191	25	$6,363	15%	76%	$0.03	319	319
Wyoming	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	2,330	25	$1,963	15%	90%	$0.08	46	46
Wyoming	Lodging	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$4,579	10%	85%	.	0.00	0.00
Wyoming	Lodging	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$12,701	10%	68%	.	0.00	0.00
Wyoming	Lodging	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	6,507	7	$1,334	90%	85%	$0.04	734	734
Wyoming	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	7,352	25	$75	15%	90%	$0.00	132	132

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Wyoming	Lodging	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	8,055	25	$463	15%	66%	$0.01	103	103
Wyoming	Lodging	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,872	15	$1,184	75%	76%	$0.03	42	42
Wyoming	Lodging	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	5,808	14	$11,644	5.0%	94%	$0.24	4	4
Wyoming	Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,742	12	$5,450	10%	75%	$0.40	2	2
Wyoming	Lodging	Space Heat	Hotel Key Card Room Energy Control System	Key card system to control room HVAC and lighting during non-occupied periods	325 sqft room, $100/room	Per Building	New	8,706	15	$2,624	60%	97%	$0.04	88	88
Wyoming	Lodging	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	965	25	$1,715	75%	85%	$0.18	5	5
Wyoming	Lodging	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	697	20	$206	45%	85%	$0.03	2	2
Wyoming	Lodging	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,733	25	$1,963	35%	90%	$0.11	5	5
Wyoming	Lodging	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,872	15	$6,770	10%	75%	$0.20	4	4
Wyoming	Lodging	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	5,469	25	$75	80%	90%	$0.00	40	40
Wyoming	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	166	10	$22	100%	N/A	$0.02	63	63
Wyoming	Lodging	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	166	10	$22	100%	N/A	$0.02	7	7
Wyoming	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	3,574	10	$830	5.0%	90%	$0.03	147	147
Wyoming	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$5,250	95%	45%	$0.50	439	439
Wyoming	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	182	15	$44	95%	76%	$0.03	116	116
Wyoming	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	4,557	20	$753	55%	45%	$0.02	992	992
Wyoming	Lodging	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	119	7	$33	65%	25%	$0.05	0.00	0.00
Wyoming	Lodging	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	3,574	10	$830	5.0%	90%	$0.03	14	14
Wyoming	Lodging	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$5,250	95%	45%	$0.50	37	37
Wyoming	Lodging	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	182	15	$44	95%	76%	$0.03	10	10
Wyoming	Lodging	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	4,557	20	$753	55%	45%	$0.02	57	57
Wyoming	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,346	15	$1,692	75%	N/A	$0.03	0.00	7

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	7,266	15	$1,011	75%	N/A	$0.02	0.00	0.00
Wyoming	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,346	15	$1,692	75%	N/A	$0.03	0.00	1
Wyoming	Lodging	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	7,266	15	$1,011	75%	N/A	$0.02	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.06	1	1
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.10	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.06	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	616	10	$1,880	55%	80%	$0.45	2	2
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.37	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.41	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.38	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	264	12	$150	60%	95%	$0.08	1	1
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	242	12	$150	60%	94%	$0.08	0.95	1
Wyoming	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,465	25	$4,200	2.5%	100%	$0.17	0.46	0.46
Wyoming	Lodging	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	123	12	$133	80%	90%	$0.14	0.66	0.66
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	196	9	$190	95%	25%	$0.15	0.37	0.37
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.09	4	4
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	2,877	10	$158	95%	73%	$0.01	16	16
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,320	10	$394	95%	62%	$0.02	10	10
Wyoming	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	308	10	$2,657	75%	95%	$1.26	1	1
Wyoming	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,405	10	$385	5.0%	94%	$0.04	0.31	0.31
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.06	0.13	0.13
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.06	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	610	10	$1,880	55%	80%	$0.45	0.15	0.15
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.37	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.41	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.38	0.00	0.00
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	254	12	$145	60%	95%	$0.08	0.08	0.08
Wyoming	Lodging	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	233	12	$145	60%	94%	$0.08	0.07	0.07
Wyoming	Lodging	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,442	25	$3,360	2.5%	100%	$0.14	0.01	0.01
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	194	9	$1	95%	25%	$0.00	0.02	0.02
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.09	0.38	0.38
Wyoming	Lodging	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	2,877	10	$158	95%	73%	$0.01	1	1
Wyoming	Lodging	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	305	10	$2,657	75%	95%	$1.27	0.13	0.13
Wyoming	Lodging	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,392	10	$385	5.0%	94%	$0.04	0.02	0.02
Wyoming	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	6,691	15	$8,692	75%	N/A	$0.15	305	396
Wyoming	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	401	15	$379	100%	N/A	$0.11	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	6,691	15	$8,692	75%	N/A	$0.15	48	51
Wyoming	Lodging	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	401	15	$379	100%	N/A	$0.11	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	1,050	9	$402	25%	80%	$0.06	20	24
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	228	14	$152	5.0%	97%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	81	14	$63	5.0%	97%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	398	14	$229	5.0%	97%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	296	14	$216	5.0%	99%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	150	14	$127	5.0%	99%	$0.10	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	466	14	$292	5.0%	99%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	146	14	$89	5.0%	94%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	316	14	$165	5.0%	94%	$0.06	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	630	10	$1,880	25%	94%	$0.44	15	15
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.37	0.00	0.02
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.06	0.07
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.41	0.00	0.06

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.38	0.48	0.55
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	264	12	$150	50%	95%	$0.08	11	13
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	242	12	$150	50%	95%	$0.08	10	12
Wyoming	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	2,520	25	$4,200	2.5%	100%	$0.17	6	6
Wyoming	Lodging	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	126	12	$133	80%	90%	$0.14	9	9
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	200	9	$190	95%	25%	$0.15	5	5
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	644	4	$195	95%	93%	$0.09	59	59
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	2,877	10	$158	95%	73%	$0.01	210	210
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	2,320	10	$394	95%	62%	$0.02	143	143
Wyoming	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	315	10	$2,657	75%	95%	$1.23	23	23
Wyoming	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	1,436	10	$385	2.5%	94%	$0.04	2	2
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	1,050	9	$402	25%	80%	$0.06	1	1
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	228	14	$152	5.0%	97%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	81	14	$63	5.0%	97%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	398	14	$229	5.0%	97%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	296	14	$216	5.0%	99%	$0.09	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	150	14	$127	5.0%	99%	$0.10	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	466	14	$292	5.0%	99%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	146	14	$89	5.0%	94%	$0.07	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	316	14	$165	5.0%	94%	$0.06	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	612	10	$1,880	25%	94%	$0.45	1	1
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.37	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.41	0.00	0.01
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.38	0.04	0.04
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	254	12	$145	50%	95%	$0.08	1	1
Wyoming	Lodging	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	233	12	$145	50%	95%	$0.08	0.97	0.97
Wyoming	Lodging	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	2,450	25	$3,360	2.5%	100%	$0.14	0.17	0.17
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	194	9	$1	95%	25%	$0.00	0.43	0.43
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	644	4	$195	95%	93%	$0.09	5	5
Wyoming	Lodging	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	2,877	10	$158	95%	73%	$0.01	17	17
Wyoming	Lodging	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	306	10	$2,657	75%	95%	$1.27	1	1
Wyoming	Lodging	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	1,396	10	$385	2.5%	94%	$0.04	0.20	0.20
Wyoming	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	248	4	$28	100%	N/A	$0.03	395	460
Wyoming	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	383	4	$28	95%	30%	$0.02	1,075	1,075
Wyoming	Miscellaneous	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	248	4	$28	100%	N/A	$0.03	21	22
Wyoming	Miscellaneous	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	383	4	$28	95%	30%	$0.02	121	121

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	598	15	$1,250	25%	94%	$0.25	12	12
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	1,254	20	$3,253	100%	N/A	$0.27	42	51
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	418	20	$1,084	100%	N/A	$0.27	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	932	20	$2,419	100%	N/A	$0.27	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,794	15	$15,200	5.0%	65%	$0.46	5	5
Wyoming	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	598	15	$1,750	45%	95%	$0.34	22	22
Wyoming	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	598	15	$875	75%	76%	$0.08	27	27
Wyoming	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	269	12	$5,450	1.0%	75%	$1.26	0.15	0.15
Wyoming	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	598	40	$50,650	2.0%	**%	$7.54	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	299	12	$66	5.0%	39%	$0.01	0.45	0.45
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	9	25	$2,633	45%	63%	$0.33	0.21	0.21
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	2	25	$1,266	25%	85%	$0.73	0.03	0.03
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,700	15%	81%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,450	15%	90%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	69%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	747	7	$985	90%	85%	$0.12	44	44
Wyoming	Miscellaneous	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	232	10	$586	35%	68%	$0.37	3	3
Wyoming	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	844	25	$13	15%	90%	$0.00	7	7
Wyoming	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	925	25	$85	15%	69%	$0.00	6	6
Wyoming	Miscellaneous	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	344	15	$666	25%	94%	$0.23	0.67	0.67
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	872	20	$2,928	100%	N/A	$0.34	5	5
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	290	20	$976	100%	N/A	$0.34	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	648	20	$2,177	100%	N/A	$0.34	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	344	15	$1,750	45%	95%	$0.60	1	1
Wyoming	Miscellaneous	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	344	15	$875	75%	76%	$0.15	1	1
Wyoming	Miscellaneous	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	154	12	$5,450	1.0%	75%	$2.40	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	344	40	$50,650	2.0%	**%	$13.10	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,266	75%	85%	$1.52	0.00	0.00
Wyoming	Miscellaneous	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	344	15	$5,000	10%	75%	$0.87	0.18	0.18
Wyoming	Miscellaneous	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	486	25	$13	80%	90%	$0.00	1	1
Wyoming	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	200	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	513	15	$504	100%	N/A	$0.12	0.00	0.00
Wyoming	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,251	15	$-10558.577	40%	N/A	$-0.29	394	547
Wyoming	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	139	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Miscellaneous	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	355	15	$403	100%	N/A	$0.13	0.00	0.00
Wyoming	Miscellaneous	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	2,945	15	$-7697.6676	40%	N/A	$-0.31	44	47
Wyoming	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	683	15	$1,250	50%	94%	$0.21	1,257	1,257
Wyoming	Miscellaneous	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	2,051	15	$15,200	15%	68%	$0.43	774	774
Wyoming	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	683	15	$1,750	45%	98%	$0.30	1,090	1,090
Wyoming	Miscellaneous	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,025	10	$3,150	10%	70%	$0.45	248	248
Wyoming	Miscellaneous	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	683	5	$888	95%	72%	$0.31	1,605	1,605
Wyoming	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,709	15	$10,416	50%	94%	$0.71	2,560	2,560
Wyoming	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	683	15	$875	75%	76%	$0.08	1,091	1,091
Wyoming	Miscellaneous	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	170	18	$1,200	45%	65%	$0.38	133	133

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	307	12	$5,450	1.0%	75%	$1.18	6	6
Wyoming	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	683	40	$50,650	2.0%	**%	$6.60	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	341	12	$66	10%	39%	$0.01	34	34
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	11	25	$2,633	45%	63%	$0.33	8	8
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	2	25	$1,266	25%	85%	$0.73	1	1
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	205	20	$869	45%	56%	$0.22	136	136
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	123	20	$152	45%	85%	$0.06	122	122
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,700	15%	81%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,450	15%	90%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	69%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	854	7	$985	90%	85%	$0.11	1,696	1,696
Wyoming	Miscellaneous	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	232	10	$586	35%	68%	$0.37	129	129
Wyoming	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	965	25	$13	15%	90%	$0.00	302	302
Wyoming	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,057	25	$85	15%	69%	$0.00	249	249
Wyoming	Miscellaneous	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	439	15	$666	50%	94%	$0.18	78	78
Wyoming	Miscellaneous	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	439	15	$1,750	45%	98%	$0.47	68	68
Wyoming	Miscellaneous	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,099	15	$10,416	50%	94%	$1.11	175	175
Wyoming	Miscellaneous	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	439	15	$875	75%	76%	$0.13	76	76
Wyoming	Miscellaneous	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	197	12	$5,450	1.0%	75%	$2.10	0.43	0.43
Wyoming	Miscellaneous	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	439	40	$50,650	2.0%	**%	$10.26	0.00	0.00
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,266	75%	85%	$1.52	0.16	0.16
Wyoming	Miscellaneous	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	79	20	$152	45%	85%	$0.11	5	5
Wyoming	Miscellaneous	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	439	15	$5,000	10%	75%	$0.76	9	9
Wyoming	Miscellaneous	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	621	25	$13	80%	90%	$0.00	88	88
Wyoming	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	830	15	$1,750	45%	98%	$0.25	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	830	15	$875	75%	76%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	373	12	$5,450	1.0%	75%	$1.06	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	830	40	$50,650	2.0%	**%	$5.43	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	415	12	$66	10%	39%	$0.01	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	13	25	$2,633	45%	63%	$0.32	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	2	25	$1,266	25%	85%	$0.73	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,700	15%	81%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,450	15%	90%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	69%	.	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	Existing	730	9	$407	5.0%	N/A	$0.09	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Window Film	Window Film	No Film	Per Building	Existing	232	10	$586	35%	68%	$0.37	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,173	25	$13	15%	90%	$0.00	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,285	25	$85	15%	69%	$0.00	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	550	15	$1,750	45%	98%	$0.37	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	550	15	$875	75%	76%	$0.12	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	247	12	$5,450	1.0%	75%	$1.83	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	550	40	$50,650	2.0%	**%	$8.20	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,266	75%	85%	$1.51	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	550	15	$5,000	10%	75%	$0.67	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	PTAC (10,000 BTU/HR) - High Efficiency	11.4 EER	Standard equipment	Per Building	New	485	9	$325	5.0%	N/A	$0.11	0.00	0.00
Wyoming	Miscellaneous	Cooling Room	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	777	25	$13	80%	90%	$0.00	0.00	0.00
Wyoming	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	37	6	$0.81	100%	N/A	$0.00	371	371
Wyoming	Miscellaneous	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	37	6	$0.81	100%	N/A	$0.00	40	40
Wyoming	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	33	4	$37	100%	N/A	$0.32	18	18
Wyoming	Miscellaneous	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	33	4	$37	100%	N/A	$0.32	13	13
Wyoming	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.41	100%	N/A	$0.01	0.00	0.00

Table C-2.2. Commercial Measure Details

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Wyoming	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	7	20	$0.20	100%	N/A	$0.00	0.00	0.63
Wyoming	Miscellaneous	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	54	20	$7	8.8%	100%	$0.01	46	46
Wyoming	Miscellaneous	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.41	100%	N/A	$0.01	0.00	0.00
Wyoming	Miscellaneous	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	7	20	$0.20	100%	N/A	$0.00	0.00	0.34
Wyoming	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,078	15	$1,876	100%	N/A	$0.20	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,930	15	$3,753	100%	N/A	$0.11	422	515
Wyoming	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	980	15	$1,250	50%	94%	$0.15	101	101
Wyoming	Miscellaneous	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	10,686	15	$15,200	15%	68%	$0.17	235	235
Wyoming	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	980	15	$1,750	45%	98%	$0.21	91	91
Wyoming	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,562	15	$875	75%	76%	$0.03	421	421
Wyoming	Miscellaneous	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	890	18	$1,200	45%	65%	$0.14	51	51
Wyoming	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,871	14	$8,600	5.0%	94%	$0.27	35	35
Wyoming	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,603	12	$5,450	1.0%	75%	$0.45	2	2
Wyoming	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	980	40	$50,650	2.0%	**%	$4.60	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	6,915	30	$11,272	5.0%	N/A	$1.52	23	32
Wyoming	Miscellaneous	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,671	12	$66	10%	39%	$0.00	20	20
Wyoming	Miscellaneous	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,002	25	$2,633	45%	63%	$0.09	164	164
Wyoming	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	643	25	$1,266	25%	85%	$0.20	25	25
Wyoming	Miscellaneous	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,068	20	$869	45%	56%	$0.08	50	50
Wyoming	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	641	20	$152	45%	85%	$0.02	45	45
Wyoming	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	9,974	25	$4,700	15%	81%	$0.05	223	223
Wyoming	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,394	25	$1,450	15%	90%	$0.10	33	33

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Wyoming	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	69%	.	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,452	7	$985	90%	85%	$0.04	609	609
Wyoming	Miscellaneous	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	232	10	$586	35%	68%	$0.37	8	8
Wyoming	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	5,031	25	$13	15%	90%	$0.00	109	109
Wyoming	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,511	25	$85	15%	69%	$0.00	90	90
Wyoming	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	582	15	$1,501	100%	N/A	$0.30	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,982	15	$3,002	100%	N/A	$0.18	34	35
Wyoming	Miscellaneous	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	469	15	$666	50%	94%	$0.17	4	4
Wyoming	Miscellaneous	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	469	15	$1,750	45%	98%	$0.44	4	4
Wyoming	Miscellaneous	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,705	15	$875	75%	76%	$0.06	20	20
Wyoming	Miscellaneous	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,854	14	$8,600	5.0%	94%	$0.56	1	1
Wyoming	Miscellaneous	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	767	12	$5,450	1.0%	75%	$0.94	0.11	0.11
Wyoming	Miscellaneous	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	469	40	$50,650	2.0%	**%	$9.60	0.00	0.00
Wyoming	Miscellaneous	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,812	30	$57,159	5.0%	N/A	$1.42	2	2
Wyoming	Miscellaneous	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	307	25	$1,266	75%	85%	$0.41	2	2
Wyoming	Miscellaneous	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	307	20	$152	45%	85%	$0.05	1	1
Wyoming	Miscellaneous	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	667	25	$1,450	35%	90%	$0.22	2	2
Wyoming	Miscellaneous	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,705	15	$5,000	10%	75%	$0.34	2	2
Wyoming	Miscellaneous	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	2,409	25	$13	80%	90%	$0.00	22	22
Wyoming	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	468	8	$130	5.0%	95%	$0.05	260	260
Wyoming	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,332	8	$480	75%	70%	$0.06	8,208	8,208
Wyoming	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,107	15	$1,495	62%	90%	$0.16	7,246	7,246
Wyoming	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	559	8	$914	90%	49%	$0.28	2,259	2,259

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Wyoming	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	49	13	$74	75%	95%	$0.19	416	416
Wyoming	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	4,555	17	$3,095	5.0%	95%	$0.07	2,538	2,538
Wyoming	Miscellaneous	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	468	8	$130	5.0%	95%	$0.05	26	26
Wyoming	Miscellaneous	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,332	8	$480	75%	70%	$0.06	847	847
Wyoming	Miscellaneous	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,107	15	$1,495	62%	90%	$0.16	685	685
Wyoming	Miscellaneous	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	559	8	$914	90%	49%	$0.28	233	233
Wyoming	Miscellaneous	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	49	13	$74	75%	95%	$0.19	39	39
Wyoming	Miscellaneous	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	4,555	17	$3,095	5.0%	95%	$0.07	213	213
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	288	10	$416	5.0%	95%	$0.21	132	132
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,037	8	$5,000	20%	84%	$0.42	3,298	3,298
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,528	8	$3,750	20%	84%	$0.42	1,207	1,207
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	151	6	$56	10%	80%	$0.08	117	117
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	93	6	$47	5.0%	80%	$0.11	35	35
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,003	13	$1,163	100%	N/A	$0.15	5,776	6,002
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	707	13	$364	100%	N/A	$0.07	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,797	13	$11,561	25%	N/A	$0.82	3,449	3,584
Wyoming	Miscellaneous	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,311	8	$914	75%	49%	$0.12	4,482	4,482
Wyoming	Miscellaneous	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	916	15	$418	100%	N/A	$0.05	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,124	15	$1,819	95%	N/A	$0.19	3,749	3,821
Wyoming	Miscellaneous	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,003	20	$13,338	50%	N/A	$1.36	97	101
Wyoming	Miscellaneous	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	640	13	$-14.938971	25%	N/A	$-0.00	0.00	0.00

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Wyoming	Miscellaneous	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	320	15	$8,445	100%	N/A	$3.09	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	422	8	$914	75%	49%	$0.37	1,714	1,714
Wyoming	Miscellaneous	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	347	11	$135	95%	50%	$0.05	1,937	1,937
Wyoming	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	69	13	$59	95%	98%	$0.11	759	759
Wyoming	Miscellaneous	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	375	10	$416	5.0%	95%	$0.16	17	17
Wyoming	Miscellaneous	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,665	8	$5,000	20%	84%	$0.51	304	304
Wyoming	Miscellaneous	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,249	8	$3,750	20%	84%	$0.51	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	117	6	$28	10%	80%	$0.05	10	10
Wyoming	Miscellaneous	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	52	6	$20	10%	80%	$0.08	4	4
Wyoming	Miscellaneous	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	69	13	$59	95%	98%	$0.11	66	66
Wyoming	Miscellaneous	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	1,878	13	$5,770	100%	N/A	$0.39	2,017	2,031
Wyoming	Miscellaneous	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,709	8	$914	75%	49%	$0.09	669	669
Wyoming	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,188	4	$74	85%	N/A	$0.00	0.00	2,510
Wyoming	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	5,413	1	$48	100%	N/A	$0.00	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,437	1	$38	100%	N/A	$0.00	0.00	0.00
Wyoming	Miscellaneous	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,239	12	$918	15%	N/A	$0.02	413	3,720
Wyoming	Miscellaneous	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	350	8	$914	75%	49%	$0.44	594	594
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	4	7	$1	10%	90%	$0.05	4	4
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	57	4	$0.00	10%	45%	$0.00	30	30
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	170	170

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Wyoming	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	15	4	$0.75	5.0%	86%	$0.01	7	7
Wyoming	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	100	4	$20	60%	90%	$0.06	633	633
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	4	7	$1	10%	90%	$0.05	0.48	0.48
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	57	4	$0.00	10%	45%	$0.00	3	3
Wyoming	Miscellaneous	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	16	16
Wyoming	Miscellaneous	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	15	4	$0.75	5.0%	86%	$0.01	0.81	0.81
Wyoming	Miscellaneous	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	100	4	$20	60%	90%	$0.06	68	68
Wyoming	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	116	6	$127	100%	N/A	$0.23	39	39
Wyoming	Miscellaneous	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	116	6	$127	100%	N/A	$0.23	6	6
Wyoming	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	72	6	$8	100%	N/A	$0.02	75	75
Wyoming	Miscellaneous	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	72	6	$8	100%	N/A	$0.02	0.00	0.00
Wyoming	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	295	15	$71	2.5%	77%	$0.03	7	7
Wyoming	Miscellaneous	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	203	15	$22	2.5%	95%	$0.01	6	6
Wyoming	Miscellaneous	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	15	15	$9	2.5%	95%	$0.08	0.46	0.46
Wyoming	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	199	10	$165	1.0%	80%	$0.12	2	2
Wyoming	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	271	10	$224	1.0%	80%	$0.12	2	2
Wyoming	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	29	8	$2	2.5%	95%	$0.02	0.89	0.89
Wyoming	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	73	5	$11	5.0%	85%	$0.04	4	4
Wyoming	Miscellaneous	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	111	13	$15	2.5%	90%	$0.02	3	3
Wyoming	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	Existing	287	15	$71	1.0%	98%	$0.03	3	3
Wyoming	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	5	10	$1	1.0%	85%	$0.03	0.06	0.06
Wyoming	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	29	15	$33	2.5%	95%	$0.13	0.91	0.91
Wyoming	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	14	15	$12	2.5%	95%	$0.11	0.42	0.42
Wyoming	Miscellaneous	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	295	15	$71	2.5%	77%	$0.03	0.67	0.67
Wyoming	Miscellaneous	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	199	10	$165	1.0%	80%	$0.12	0.19	0.19
Wyoming	Miscellaneous	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	271	10	$224	1.0%	80%	$0.12	0.26	0.26
Wyoming	Miscellaneous	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	29	8	$2	2.5%	95%	$0.02	0.09	0.09

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Wyoming	Miscellaneous	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	73	5	$11	5.0%	85%	$0.04	0.43	0.43
Wyoming	Miscellaneous	Refrigeration	VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Per Building	New	287	15	$71	1.0%	98%	$0.03	0.33	0.33
Wyoming	Miscellaneous	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	5	10	$1	1.0%	85%	$0.03	0.00	0.00
Wyoming	Miscellaneous	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	29	15	$33	2.5%	95%	$0.13	0.08	0.08
Wyoming	Miscellaneous	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	14	15	$12	2.5%	95%	$0.11	0.03	0.03
Wyoming	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	95	20	$261	100%	N/A	$0.28	0.00	0.00
Wyoming	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	107	20	$350	100%	N/A	$0.33	234	284
Wyoming	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	84	20	$20	100%	N/A	$0.02	0.00	0.00
Wyoming	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$9	100%	N/A	$0.04	0.00	0.00
Wyoming	Miscellaneous	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	640	20	$71	8.8%	100%	$0.01	489	489
Wyoming	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	95	20	$261	100%	N/A	$0.28	0.00	0.00
Wyoming	Miscellaneous	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	107	20	$350	100%	N/A	$0.33	60	63
Wyoming	Miscellaneous	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	84	20	$20	100%	N/A	$0.02	0.00	0.00
Wyoming	Miscellaneous	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$9	100%	N/A	$0.04	0.00	0.00
Wyoming	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	15	9	$2	100%	N/A	$0.02	140	143
Wyoming	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	54	4	$202	10%	50%	$1.07	25	25
Wyoming	Miscellaneous	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	15	9	$2	100%	N/A	$0.02	16	16
Wyoming	Miscellaneous	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	53	4	$202	10%	50%	$1.07	2	2
Wyoming	Miscellaneous	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	11,385	15	$15,200	15%	68%	$0.14	1,881	1,881
Wyoming	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,795	15	$875	75%	76%	$0.02	3,410	3,410
Wyoming	Miscellaneous	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	948	18	$1,200	45%	65%	$0.12	415	415
Wyoming	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,692	14	$8,600	5.0%	94%	$0.18	396	396
Wyoming	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,707	12	$5,450	1.0%	75%	$0.39	18	18
Wyoming	Miscellaneous	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	3,795	12	$66	10%	39%	$0.00	216	216
Wyoming	Miscellaneous	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	4,417	25	$2,633	45%	63%	$0.06	1,827	1,827
Wyoming	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	946	25	$1,266	25%	85%	$0.13	284	284
Wyoming	Miscellaneous	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,138	20	$869	45%	56%	$0.07	406	406

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Wyoming	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	683	20	$152	45%	85%	$0.02	365	365
Wyoming	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	13,260	25	$4,700	15%	81%	$0.04	2,225	2,225
Wyoming	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,698	25	$1,450	15%	90%	$0.09	305	305
Wyoming	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,382	10%	85%	.	0.00	0.00
Wyoming	Miscellaneous	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,380	10%	69%	.	0.00	0.00
Wyoming	Miscellaneous	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,743	7	$985	90%	85%	$0.04	4,811	4,811
Wyoming	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	5,359	25	$13	15%	90%	$0.00	864	864
Wyoming	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,872	25	$85	15%	69%	$0.00	712	712
Wyoming	Miscellaneous	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	1,820	15	$875	75%	76%	$0.05	159	159
Wyoming	Miscellaneous	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,730	14	$8,600	5.0%	94%	$0.38	18	18
Wyoming	Miscellaneous	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	819	12	$5,450	1.0%	75%	$0.78	0.90	0.90
Wyoming	Miscellaneous	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	453	25	$1,266	75%	85%	$0.28	25	25
Wyoming	Miscellaneous	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	327	20	$152	45%	85%	$0.04	10	10
Wyoming	Miscellaneous	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	814	25	$1,450	35%	90%	$0.18	21	21
Wyoming	Miscellaneous	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,820	15	$5,000	10%	75%	$0.29	18	18
Wyoming	Miscellaneous	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	2,570	25	$13	80%	90%	$0.00	177	177
Wyoming	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	242	10	$33	100%	N/A	$0.02	1,181	1,181
Wyoming	Miscellaneous	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	242	10	$33	100%	N/A	$0.02	142	142
Wyoming	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	2,250	10	$613	5.0%	90%	$0.04	1,187	1,187
Wyoming	Miscellaneous	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	3,375	15	$15,200	15%	68%	$0.53	3,972	3,972
Wyoming	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	93	18	$200	95%	65%	$0.23	675	675
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	114	15	$33	95%	76%	$0.03	925	925
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,868	20	$556	55%	45%	$0.02	7,903	7,903
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	590	15	$1,825	13%	77%	$0.36	612	612

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Wyoming	Miscellaneous	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	88	7	$25	65%	25%	$0.05	0.00	0.00
Wyoming	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	180	18	$1,705	5.0%	59%	$1.01	62	62
Wyoming	Miscellaneous	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	1,890	10	$613	5.0%	90%	$0.05	95	95
Wyoming	Miscellaneous	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	559	18	$1,200	95%	50%	$0.23	264	264
Wyoming	Miscellaneous	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	3,750	50	$12,500	16%	98%	$0.29	379	379
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	96	15	$33	95%	76%	$0.04	69	69
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,409	20	$556	55%	45%	$0.02	364	364
Wyoming	Miscellaneous	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	496	15	$1,825	13%	77%	$0.43	45	45
Wyoming	Miscellaneous	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	151	18	$1,705	5.0%	59%	$1.21	4	4
Wyoming	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,103	15	$403	75%	N/A	$0.04	0.00	16
Wyoming	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	1,091	15	$240	75%	N/A	$0.03	0.00	0.00
Wyoming	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,073	15	$403	75%	N/A	$0.04	0.00	2
Wyoming	Miscellaneous	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	1,061	15	$240	75%	N/A	$0.03	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.06	0.03	0.03
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.10	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.06	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	92	10	$1,389	55%	94%	$2.19	5	5
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.37	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.01	0.01
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.41	0.00	0.01
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.38	0.11	0.14
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	1.0%	95%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	3	12	$2	1.0%	94%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	370	25	$1,000	2.5%	100%	$0.27	1	1
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	18	12	$31	80%	90%	$0.23	1	1
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	29	9	$14	95%	25%	$0.07	0.79	0.79
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	429	4	$130	95%	93%	$0.09	42	42
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	111	10	$11	95%	73%	$0.02	8	8
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	90	10	$29	95%	62%	$0.05	5	5
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	46	10	$196	75%	95%	$0.62	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	210	10	$165	2.5%	94%	$0.11	0.37	0.37
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.06	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.10	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.06	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	89	10	$1,389	55%	94%	$2.27	0.38	0.38
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.37	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.41	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.38	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	1.0%	95%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	3	12	$2	1.0%	94%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	356	25	$800	2.5%	100%	$0.22	0.02	0.02
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	28	9	$0.10	95%	25%	$0.00	0.06	0.06
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	429	4	$130	95%	93%	$0.09	3	3
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	111	10	$11	95%	73%	$0.02	0.66	0.66
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	44	10	$196	75%	95%	$0.64	0.26	0.26
Wyoming	Miscellaneous	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	203	10	$165	2.5%	94%	$0.12	0.02	0.02
Wyoming	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,004	15	$2,069	75%	N/A	$0.24	704	860
Wyoming	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	60	15	$90	100%	N/A	$0.18	0.00	0.00
Wyoming	Miscellaneous	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	977	15	$2,069	75%	N/A	$0.25	97	104
Wyoming	Miscellaneous	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	58	15	$90	100%	N/A	$0.18	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	1.0%	80%	$0.06	0.41	0.48
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	0.5%	97%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	0.5%	97%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	0.5%	97%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	0.5%	99%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	0.5%	99%	$0.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	0.5%	99%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	0.5%	94%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	0.5%	94%	$0.06	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	94	10	$1,389	25%	94%	$2.14	33	33
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	3	12	$8	75%	35%	$0.37	0.00	0.07
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.62	12	$0.39	75%	35%	$0.08	0.20	0.23
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	5	12	$16	75%	55%	$0.41	0.00	0.19
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.38	1	1
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	4	12	$2	5.0%	95%	$0.08	0.25	0.30
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	3	12	$2	5.0%	95%	$0.08	0.23	0.27
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	378	25	$1,000	2.5%	100%	$0.26	13	13
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	18	12	$31	80%	90%	$0.22	19	19
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	30	9	$14	95%	25%	$0.07	10	10
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	429	4	$130	95%	93%	$0.09	561	561
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	111	10	$11	95%	73%	$0.02	115	115
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	90	10	$29	95%	62%	$0.05	78	78
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	47	10	$196	75%	95%	$0.61	50	50
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	215	10	$165	2.5%	94%	$0.11	5	5

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	1.0%	80%	$0.06	0.03	0.03
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	0.5%	97%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	0.5%	97%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	0.5%	97%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	0.5%	99%	$0.09	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	0.5%	99%	$0.10	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	0.5%	99%	$0.08	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	0.5%	94%	$0.07	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	0.5%	94%	$0.06	0.00	0.00
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	89	10	$1,389	25%	94%	$2.27	2	2
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	3	12	$8	75%	35%	$0.37	0.00	0.01
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.62	12	$0.39	75%	35%	$0.08	0.01	0.01
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	5	12	$16	75%	55%	$0.41	0.00	0.03
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.38	0.13	0.13
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	4	12	$2	5.0%	95%	$0.08	0.02	0.02

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	3	12	$2	5.0%	95%	$0.08	0.02	0.02
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	357	25	$800	2.5%	100%	$0.22	0.36	0.36
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	28	9	$0.10	95%	25%	$0.00	0.88	0.88
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	429	4	$130	95%	93%	$0.09	52	52
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	111	10	$11	95%	73%	$0.02	9	9
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	44	10	$196	75%	95%	$0.64	3	3
Wyoming	Miscellaneous	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	204	10	$165	2.5%	94%	$0.12	0.41	0.41
Wyoming	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	51	4	$5	100%	N/A	$0.03	7	7
Wyoming	Restaurant	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	51	4	$5	100%	N/A	$0.03	0.43	0.43
Wyoming	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	4,663	12	$786	90%	90%	$0.02	570	570
Wyoming	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	420	12	$1,097	70%	86%	$0.35	37	37
Wyoming	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	943	12	$229	95%	85%	$0.03	114	114
Wyoming	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	1,644	12	$931	40%	45%	$0.08	0.00	0.00
Wyoming	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	2,680	12	$1,713	35%	21%	$0.08	30	30
Wyoming	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	4,630	12	$2,608	39%	75%	$0.07	201	201
Wyoming	Restaurant	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	4,663	12	$786	90%	90%	$0.02	54	54
Wyoming	Restaurant	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	420	12	$1,097	70%	86%	$0.35	3	3
Wyoming	Restaurant	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	943	12	$229	95%	85%	$0.03	11	11
Wyoming	Restaurant	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	1,644	12	$931	40%	45%	$0.08	0.00	0.00
Wyoming	Restaurant	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	2,680	12	$1,713	35%	21%	$0.08	2	2
Wyoming	Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	4,630	12	$2,608	39%	75%	$0.07	19	19
Wyoming	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	241	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	616	15	$471	100%	N/A	$0.09	32	42

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	5,104	15	$-9882.8281	12%	N/A	$-0.23	29	38
Wyoming	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	147	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	376	15	$377	100%	N/A	$0.12	3	3
Wyoming	Restaurant	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,119	15	$-7205.0168	12%	N/A	$-0.27	2	3
Wyoming	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	954	15	$910	45%	98%	$0.11	243	243
Wyoming	Restaurant	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,431	10	$2,948	10%	50%	$0.30	39	39
Wyoming	Restaurant	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	954	5	$832	95%	72%	$0.21	358	358
Wyoming	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	2,385	15	$5,416	50%	94%	$0.27	572	572
Wyoming	Restaurant	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	238	18	$624	45%	65%	$0.23	31	31
Wyoming	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	429	12	$5,450	65%	75%	$1.37	93	93
Wyoming	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	954	40	$26,338	2.0%	**%	$2.46	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	477	12	$106	40%	39%	$0.02	32	32
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	15	25	$1,369	45%	58%	$0.50	1	1
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	3	25	$658	25%	85%	$1.13	0.30	0.30
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	286	20	$452	45%	59%	$0.13	33	33
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	171	20	$79	45%	85%	$0.04	28	28
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$2,444	15%	83%	.	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$754	15%	90%	.	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,758	10%	85%	.	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,877	10%	62%	.	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,192	7	$512	90%	85%	$0.07	391	391
Wyoming	Restaurant	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	475	10	$935	35%	68%	$0.29	43	43
Wyoming	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,347	25	$22	15%	90%	$0.00	69	69
Wyoming	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,476	25	$136	15%	56%	$0.01	46	46
Wyoming	Restaurant	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	535	15	$910	45%	98%	$0.20	13	13

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Wyoming	Restaurant	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,338	15	$5,416	50%	94%	$0.47	33	33
Wyoming	Restaurant	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	240	12	$5,450	65%	75%	$2.52	5	5
Wyoming	Restaurant	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	535	40	$26,338	2.0%	**%	$4.38	0.00	0.00
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$658	75%	85%	$2.35	0.03	0.03
Wyoming	Restaurant	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	96	20	$79	45%	85%	$0.07	1	1
Wyoming	Restaurant	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	535	15	$2,600	10%	75%	$0.48	1	1
Wyoming	Restaurant	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	755	25	$22	80%	90%	$0.00	17	17
Wyoming	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	81	6	$1	100%	N/A	$0.00	64	64
Wyoming	Restaurant	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	81	6	$1	100%	N/A	$0.00	6	6
Wyoming	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	6	4	$7	100%	N/A	$0.32	0.31	0.31
Wyoming	Restaurant	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	6	4	$7	100%	N/A	$0.32	0.22	0.22
Wyoming	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	8	20	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	23	20	$0.61	100%	N/A	$0.00	0.00	0.15
Wyoming	Restaurant	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	163	20	$23	8.8%	100%	$0.01	11	11
Wyoming	Restaurant	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	8	20	$1	100%	N/A	$0.01	0.00	0.00
Wyoming	Restaurant	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	23	20	$0.61	100%	N/A	$0.00	0.00	0.08
Wyoming	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	692	15	$1,756	100%	N/A	$0.30	0.00	0.00
Wyoming	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,047	15	$3,513	100%	N/A	$0.20	0.00	0.00
Wyoming	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	1,082	15	$910	45%	98%	$0.10	0.00	0.00
Wyoming	Restaurant	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	515	18	$624	45%	65%	$0.13	0.00	0.00
Wyoming	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,470	14	$4,472	5.0%	94%	$0.37	0.00	0.00
Wyoming	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	928	12	$5,450	65%	75%	$0.78	0.00	0.00
Wyoming	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	1,082	40	$26,338	2.0%	**%	$2.17	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,710	30	$4,151	5.0%	N/A	$2.09	0.00	0.00
Wyoming	Restaurant	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,546	12	$106	40%	39%	$0.01	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,151	25	$1,369	45%	58%	$0.12	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	246	25	$658	25%	85%	$0.27	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	618	20	$452	45%	59%	$0.07	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	371	20	$79	45%	85%	$0.02	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,432	25	$2,444	15%	83%	$0.10	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	475	25	$754	15%	90%	$0.16	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,758	10%	85%	.	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,877	10%	62%	.	0.00	0.00
Wyoming	Restaurant	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	2,578	7	$512	90%	85%	$0.04	0.00	0.00
Wyoming	Restaurant	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	475	10	$935	35%	68%	$0.29	0.00	0.00
Wyoming	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	2,912	25	$22	15%	90%	$0.00	0.00	0.00
Wyoming	Restaurant	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	3,191	25	$136	15%	56%	$0.00	0.00	0.00
Wyoming	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	378	15	$1,405	100%	N/A	$0.44	0.00	0.00
Wyoming	Restaurant	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,059	15	$2,810	100%	N/A	$0.31	0.00	0.00
Wyoming	Restaurant	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	530	15	$910	45%	98%	$0.20	0.00	0.00
Wyoming	Restaurant	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	720	14	$4,472	5.0%	94%	$0.76	0.00	0.00
Wyoming	Restaurant	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	454	12	$5,450	65%	75%	$1.59	0.00	0.00
Wyoming	Restaurant	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	530	40	$26,338	2.0%	**%	$4.42	0.00	0.00
Wyoming	Restaurant	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	2,604	30	$53,500	5.0%	N/A	$1.94	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	120	25	$658	75%	85%	$0.54	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	181	20	$79	45%	85%	$0.04	0.00	0.00
Wyoming	Restaurant	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	233	25	$754	35%	90%	$0.32	0.00	0.00
Wyoming	Restaurant	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,011	15	$2,600	10%	75%	$0.30	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Restaurant	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	1,428	25	$22	80%	90%	$0.00	0.00	0.00
Wyoming	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	243	8	$67	5.0%	95%	$0.05	10	10
Wyoming	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,329	8	$346	75%	70%	$0.04	653	653
Wyoming	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	1,104	15	$1,492	62%	90%	$0.16	576	576
Wyoming	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	558	8	$475	45%	48%	$0.14	89	89
Wyoming	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$57	75%	95%	$0.19	25	25
Wyoming	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	2,368	17	$1,609	5.0%	95%	$0.07	105	105
Wyoming	Restaurant	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	243	8	$67	5.0%	95%	$0.05	1	1
Wyoming	Restaurant	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,329	8	$346	75%	70%	$0.04	67	67
Wyoming	Restaurant	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	1,104	15	$1,492	62%	90%	$0.16	54	54
Wyoming	Restaurant	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	558	8	$475	45%	48%	$0.14	9	9
Wyoming	Restaurant	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$57	75%	95%	$0.19	2	2
Wyoming	Restaurant	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	2,368	17	$1,609	5.0%	95%	$0.07	8	8
Wyoming	Restaurant	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	236	10	$216	0.5%	95%	$0.13	0.87	0.87
Wyoming	Restaurant	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	2,315	8	$2,600	5.0%	98%	$0.19	88	88
Wyoming	Restaurant	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,736	8	$1,950	5.0%	98%	$0.19	66	66
Wyoming	Restaurant	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	872	6	$323	25%	80%	$0.08	136	136
Wyoming	Restaurant	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	535	6	$271	25%	80%	$0.11	83	83
Wyoming	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	601	13	$244	100%	N/A	$0.05	0.00	0.00
Wyoming	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,011	13	$759	100%	N/A	$0.10	474	486
Wyoming	Restaurant	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,701	13	$6,843	25%	N/A	$0.51	265	272
Wyoming	Restaurant	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,074	8	$475	5.0%	48%	$0.08	19	19
Wyoming	Restaurant	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	154	15	$54	100%	N/A	$0.04	0.00	0.00

Table C-2.2. Commercial Measure Details

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Wyoming	Restaurant	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	188	15	$237	95%	N/A	$0.15	51	51
Wyoming	Restaurant	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	168	16	$1,747	50%	N/A	$1.17	2	2
Wyoming	Restaurant	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	107	10	$-2.8089322	25%	N/A	$-0.00	0.00	0.00
Wyoming	Restaurant	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	53	15	$1,105	100%	N/A	$2.41	0.00	0.00
Wyoming	Restaurant	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	70	8	$475	5.0%	48%	$1.15	1	1
Wyoming	Restaurant	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	455	11	$177	95%	50%	$0.05	202	202
Wyoming	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	91	13	$77	95%	98%	$0.11	79	79
Wyoming	Restaurant	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	400	10	$216	0.5%	95%	$0.08	0.15	0.15
Wyoming	Restaurant	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,015	8	$2,600	5.0%	98%	$0.22	8	8
Wyoming	Restaurant	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,511	8	$1,950	5.0%	98%	$0.22	6	6
Wyoming	Restaurant	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	675	6	$164	25%	80%	$0.05	12	12
Wyoming	Restaurant	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	304	6	$118	25%	80%	$0.08	5	5
Wyoming	Restaurant	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	91	13	$77	95%	98%	$0.11	6	6
Wyoming	Restaurant	Lighting Interior Other	Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	2,003	13	$6,028	100%	N/A	$0.38	176	177
Wyoming	Restaurant	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	1,822	8	$475	5.0%	48%	$0.04	3	3
Wyoming	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	27,226	4	$255	85%	N/A	$0.00	0.00	47
Wyoming	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	23,809	1	$168	100%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,098	1	$133	100%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	27,454	12	$3,164	15%	N/A	$0.02	115	619

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Wyoming	Restaurant	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,037	8	$475	5.0%	48%	$0.08	13	13
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.51	10%	90%	$0.05	0.15	0.15
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	124	4	$0.00	10%	45%	$0.00	5	5
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	71	10	$0.35	95%	75%	$0.00	47	47
Wyoming	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	704	10	$498	95%	86%	$0.10	535	535
Wyoming	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	6	4	$0.39	5.0%	86%	$0.02	0.25	0.25
Wyoming	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	52	4	$10	60%	90%	$0.06	26	26
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.51	10%	90%	$0.05	0.01	0.01
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	124	4	$0.00	10%	45%	$0.00	0.56	0.56
Wyoming	Restaurant	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	71	10	$0.35	95%	75%	$0.00	4	4
Wyoming	Restaurant	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	704	10	$498	95%	86%	$0.10	51	51
Wyoming	Restaurant	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	6	4	$0.39	5.0%	86%	$0.02	0.02	0.02
Wyoming	Restaurant	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	52	4	$10	60%	90%	$0.06	2	2
Wyoming	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	252	6	$275	100%	N/A	$0.23	6	6
Wyoming	Restaurant	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	252	6	$275	100%	N/A	$0.23	1	1
Wyoming	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	13	6	$1	100%	N/A	$0.02	1	1
Wyoming	Restaurant	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	13	6	$1	100%	N/A	$0.02	0.00	0.00
Wyoming	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	1,023	8	$87	25%	45%	$0.01	82	82
Wyoming	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	1,697	15	$412	10%	77%	$0.03	93	93
Wyoming	Restaurant	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	1,172	15	$127	10%	95%	$0.01	80	80
Wyoming	Restaurant	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	87	15	$57	10%	95%	$0.08	5	5
Wyoming	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,148	10	$952	10%	80%	$0.12	66	66
Wyoming	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	1,558	10	$1,291	10%	80%	$0.12	89	89
Wyoming	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	304	10	$3,300	5.0%	68%	$1.58	7	7
Wyoming	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	168	8	$16	1.0%	95%	$0.02	1	1
Wyoming	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	192	12	$181	95%	77%	$0.13	100	100
Wyoming	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	Existing	421	5	$67	30%	85%	$0.04	74	74

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Wyoming	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	1,422	3	$223	10%	85%	$0.06	84	84
Wyoming	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	151	12	$-35.48929	95%	81%	$-0.03	83	83
Wyoming	Restaurant	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	643	13	$91	10%	90%	$0.02	39	39
Wyoming	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	274	4	$198	5.0%	20%	$0.21	1	1
Wyoming	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	32	10	$6	2.5%	85%	$0.03	0.49	0.49
Wyoming	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	171	15	$190	35%	95%	$0.13	40	40
Wyoming	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	155	15	$140	35%	95%	$0.11	35	35
Wyoming	Restaurant	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	1,023	8	$87	25%	45%	$0.01	8	8
Wyoming	Restaurant	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	1,697	15	$412	10%	77%	$0.03	8	8
Wyoming	Restaurant	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	1,148	10	$952	10%	80%	$0.12	6	6
Wyoming	Restaurant	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	1,558	10	$1,291	10%	80%	$0.12	8	8
Wyoming	Restaurant	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	304	10	$3,300	5.0%	68%	$1.58	0.69	0.69
Wyoming	Restaurant	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	168	8	$16	1.0%	95%	$0.02	0.11	0.11
Wyoming	Restaurant	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	192	12	$181	95%	77%	$0.13	9	9
Wyoming	Restaurant	Refrigeration	Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Per Building	New	421	5	$67	30%	85%	$0.04	8	8
Wyoming	Restaurant	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	711	3	$86	5.0%	90%	$0.04	2	2
Wyoming	Restaurant	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	151	12	$-35.48929	95%	81%	$-0.03	8	8
Wyoming	Restaurant	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	274	4	$198	5.0%	20%	$0.21	0.20	0.20
Wyoming	Restaurant	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	32	10	$6	2.5%	85%	$0.03	0.04	0.04
Wyoming	Restaurant	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	171	15	$190	35%	95%	$0.13	3	3
Wyoming	Restaurant	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	155	15	$140	35%	95%	$0.11	3	3
Wyoming	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	286	20	$779	100%	N/A	$0.28	0.00	0.00
Wyoming	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	321	20	$1,044	100%	N/A	$0.33	55	67
Wyoming	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	251	20	$61	100%	N/A	$0.02	0.00	0.00
Wyoming	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	80	20	$27	100%	N/A	$0.04	0.00	0.00
Wyoming	Restaurant	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,910	20	$213	8.8%	100%	$0.01	116	116

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Wyoming	Restaurant	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	286	20	$779	100%	N/A	$0.28	0.00	0.00
Wyoming	Restaurant	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	321	20	$1,044	100%	N/A	$0.33	14	15
Wyoming	Restaurant	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	251	20	$61	100%	N/A	$0.02	0.00	0.00
Wyoming	Restaurant	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	80	20	$27	100%	N/A	$0.04	0.00	0.00
Wyoming	Restaurant	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	302	18	$624	45%	65%	$0.12	12	12
Wyoming	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,817	14	$4,472	5.0%	94%	$0.30	11	11
Wyoming	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	545	12	$5,450	65%	75%	$0.74	36	36
Wyoming	Restaurant	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,211	12	$106	40%	39%	$0.01	25	25
Wyoming	Restaurant	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,410	25	$1,369	45%	58%	$0.10	48	48
Wyoming	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	302	25	$658	25%	85%	$0.22	8	8
Wyoming	Restaurant	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	363	20	$452	45%	59%	$0.07	12	12
Wyoming	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	218	20	$79	45%	85%	$0.02	10	10
Wyoming	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,913	25	$2,444	15%	83%	$0.08	45	45
Wyoming	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	542	25	$754	15%	90%	$0.14	8	8
Wyoming	Restaurant	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,758	10%	85%	.	0.00	0.00
Wyoming	Restaurant	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$4,877	10%	62%	.	0.00	0.00
Wyoming	Restaurant	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,514	7	$512	90%	85%	$0.04	140	140
Wyoming	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,711	25	$22	15%	90%	$0.00	25	25
Wyoming	Restaurant	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,874	25	$136	15%	56%	$0.00	16	16
Wyoming	Restaurant	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	861	14	$4,472	5.0%	94%	$0.63	0.53	0.53
Wyoming	Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	258	12	$5,450	65%	75%	$1.45	1	1
Wyoming	Restaurant	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	143	25	$658	75%	85%	$0.45	0.70	0.70
Wyoming	Restaurant	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	103	20	$79	45%	85%	$0.04	0.29	0.29
Wyoming	Restaurant	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	257	25	$754	35%	90%	$0.29	0.60	0.60
Wyoming	Restaurant	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	574	15	$2,600	10%	75%	$0.27	0.51	0.51
Wyoming	Restaurant	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	811	25	$22	80%	90%	$0.00	4	4
Wyoming	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,865	18	$6,250	95%	25%	$0.36	414	414
Wyoming	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	106	15	$17	95%	76%	$0.02	68	68

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,671	20	$289	55%	45%	$0.01	587	587
Wyoming	Restaurant	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	45	7	$13	65%	25%	$0.05	0.00	0.00
Wyoming	Restaurant	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,865	18	$6,250	95%	25%	$0.36	35	35
Wyoming	Restaurant	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	106	15	$17	95%	76%	$0.02	6	6
Wyoming	Restaurant	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,658	20	$289	55%	45%	$0.01	33	33
Wyoming	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	13,952	15	$564	75%	N/A	$0.00	0.00	7
Wyoming	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	13,800	15	$337	75%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	13,952	15	$564	75%	N/A	$0.00	0.00	1
Wyoming	Restaurant	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	13,800	15	$337	75%	N/A	$0.00	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,170	10	$722	75%	94%	$0.09	3	3
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	20%	35%	$0.37	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	20%	35%	$0.08	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	20%	55%	$0.41	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	20%	55%	$0.38	0.00	0.01
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,909	12	$1,654	75%	95%	$0.08	6	8
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	75%	94%	$0.08	6	7
Wyoming	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,681	25	$1,400	2.5%	100%	$0.03	0.34	0.34
Wyoming	Restaurant	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	234	12	$44	80%	90%	$0.03	0.49	0.49
Wyoming	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	372	9	$18	95%	25%	$0.01	0.33	0.33

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Wyoming	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.09	0.67	0.67
Wyoming	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	585	10	$255	75%	95%	$0.06	1	1
Wyoming	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,668	10	$951	45%	94%	$0.05	3	3
Wyoming	Restaurant	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,159	10	$722	75%	94%	$0.09	0.22	0.22
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	20%	35%	$0.37	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	20%	35%	$0.08	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	20%	55%	$0.41	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	20%	55%	$0.38	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	75%	95%	$0.08	0.55	0.55
Wyoming	Restaurant	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	75%	94%	$0.08	0.50	0.50
Wyoming	Restaurant	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,639	25	$1,120	2.5%	100%	$0.02	0.00	0.00
Wyoming	Restaurant	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	369	9	$0.13	95%	25%	$0.00	0.02	0.02
Wyoming	Restaurant	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.09	0.05	0.05
Wyoming	Restaurant	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	579	10	$255	75%	95%	$0.06	0.11	0.11
Wyoming	Restaurant	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,644	10	$951	45%	94%	$0.05	0.23	0.23
Wyoming	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	12,707	15	$2,897	75%	N/A	$0.03	305	363
Wyoming	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	762	15	$126	100%	N/A	$0.02	0.00	0.00
Wyoming	Restaurant	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	12,707	15	$2,897	75%	N/A	$0.03	43	45
Wyoming	Restaurant	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	762	15	$126	100%	N/A	$0.02	0.00	0.00

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Wyoming	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,196	10	$722	75%	94%	$0.09	41	41
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	26	12	$73	75%	35%	$0.37	0.00	0.01
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	5	12	$3	75%	35%	$0.08	0.05	0.06
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	46	12	$141	75%	55%	$0.41	0.00	0.05
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	25	12	$71	75%	55%	$0.38	0.42	0.48
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,909	12	$1,654	85%	95%	$0.08	100	117
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	2,667	12	$1,654	85%	95%	$0.08	91	107
Wyoming	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	4,787	25	$1,400	2.5%	100%	$0.03	4	4
Wyoming	Restaurant	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	239	12	$44	80%	90%	$0.02	6	6
Wyoming	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	380	9	$18	95%	25%	$0.01	4	4
Wyoming	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	408	4	$123	95%	46%	$0.09	8	8
Wyoming	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	598	10	$255	75%	95%	$0.06	20	20
Wyoming	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	2,728	10	$951	25%	94%	$0.05	23	23
Wyoming	Restaurant	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,163	10	$722	75%	94%	$0.09	3	3
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	26	12	$73	75%	35%	$0.37	0.00	0.00
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	5	12	$3	75%	35%	$0.08	0.00	0.00
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	46	12	$141	75%	55%	$0.41	0.00	0.00
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	25	12	$71	75%	55%	$0.38	0.03	0.03

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Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,801	12	$1,593	85%	95%	$0.08	9	9
Wyoming	Restaurant	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	2,568	12	$1,593	85%	95%	$0.08	8	8
Wyoming	Restaurant	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	4,653	25	$1,120	2.5%	100%	$0.02	0.12	0.12
Wyoming	Restaurant	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	370	9	$0.13	95%	25%	$0.00	0.38	0.38
Wyoming	Restaurant	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	408	4	$123	95%	46%	$0.09	0.82	0.82
Wyoming	Restaurant	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	581	10	$255	75%	95%	$0.06	1	1
Wyoming	Restaurant	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	2,652	10	$951	25%	94%	$0.05	1	1
Wyoming	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	3,620	4	$413	100%	N/A	$0.03	410	477
Wyoming	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	5,585	4	$413	95%	30%	$0.02	1,115	1,115
Wyoming	School	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	3,620	4	$413	100%	N/A	$0.03	22	23
Wyoming	School	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	5,585	4	$413	95%	30%	$0.02	126	126
Wyoming	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	Existing	104	12	$17	90%	90%	$0.02	11	11
Wyoming	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	Existing	9	12	$24	35%	90%	$0.35	0.41	0.41
Wyoming	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	Existing	32	12	$7	95%	85%	$0.03	3	3
Wyoming	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	Existing	56	12	$32	26%	40%	$0.08	0.00	0.00
Wyoming	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	Existing	92	12	$59	75%	21%	$0.08	2	2
Wyoming	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	Existing	159	12	$89	14%	75%	$0.07	2	2
Wyoming	School	Cooking	Combination Oven	60% cooking efficiency	Non ENERGY STAR	Per Building	New	104	12	$17	90%	90%	$0.02	1	1
Wyoming	School	Cooking	Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Per Building	New	9	12	$24	35%	90%	$0.35	0.03	0.03
Wyoming	School	Cooking	Griddle	70% cooking efficiency	Non ENERGY STAR	Per Building	New	32	12	$7	95%	85%	$0.03	0.35	0.35
Wyoming	School	Cooking	High Efficiency Convection Oven	Convection Oven	Standard Oven	Per Building	New	56	12	$32	26%	40%	$0.08	0.00	0.00
Wyoming	School	Cooking	Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Per Building	New	92	12	$59	75%	21%	$0.08	0.19	0.19
Wyoming	School	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Non ENERGY STAR Steam Cooker	Per Building	New	159	12	$89	14%	75%	$0.07	0.22	0.22

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	342	15	$4,871	25%	94%	$1.67	11	11
Wyoming	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	42	5	$3,319	95%	81%	$18.51	4	4
Wyoming	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	258	10	$20,432	25%	70%	$11.53	6	6
Wyoming	School	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	171	15	$47,438	45%	90%	$32.52	9	9
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	772	20	$8,420	100%	N/A	$1.11	32	47
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	128	20	$1,403	100%	N/A	$1.11	0.00	0.00
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	Existing	472	20	$5,146	100%	N/A	$1.11	0.00	0.00
Wyoming	School	Cooling Chillers	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,026	15	$59,235	15%	68%	$6.77	14	14
Wyoming	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	342	15	$6,819	65%	98%	$2.34	28	28
Wyoming	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	273	7	$2,525	10%	94%	$1.73	3	3
Wyoming	School	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	479	15	$226	65%	35%	$0.06	13	13
Wyoming	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	136	13	$1,828	75%	65%	$1.69	7	7
Wyoming	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	342	15	$3,409	75%	76%	$1.17	22	22
Wyoming	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	153	12	$5,450	25%	75%	$4.71	3	3
Wyoming	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	342	40	$97,388	2.0%	**%	$51.37	0.00	0.00
Wyoming	School	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	171	12	$513	10%	39%	$0.40	0.72	0.72
Wyoming	School	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	13	25	$10,262	45%	67%	$77.40	0.43	0.43
Wyoming	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1	25	$4,936	25%	85%	$413.91	0.02	0.02
Wyoming	School	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	83%	.	0.00	0.00
Wyoming	School	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Wyoming	School	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$13,180	10%	85%	.	0.00	0.00
Wyoming	School	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$36,556	10%	74%	.	0.00	0.00
Wyoming	School	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WY State Code)	No Insulation	Per Building	Existing	51	15	$400	65%	45%	$0.91	1	1
Wyoming	School	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	427	7	$3,841	90%	85%	$1.68	35	35

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	1,248	10	$4,529	35%	68%	$0.53	29	29
Wyoming	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	483	25	$107	15%	90%	$0.02	5	5
Wyoming	School	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	529	25	$659	15%	70%	$0.12	4	4
Wyoming	School	Cooling Chillers	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	269	15	$2,598	25%	94%	$1.13	0.85	0.85
Wyoming	School	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	33	5	$3,319	95%	81%	$23.51	0.38	0.38
Wyoming	School	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	203	10	$18,389	25%	70%	$13.19	0.46	0.46
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - Advanced Efficiency	0.50 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	716	20	$7,578	100%	N/A	$1.08	6	6
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - High Efficiency	0.65 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	119	20	$1,263	100%	N/A	$1.08	0.00	0.00
Wyoming	School	Cooling Chillers	Chillers 150-300 tons (screw) - Premium Efficiency	0.57 kW/ton (full load)	0.68 kW/ton (full load)	Per Building	New	437	20	$4,631	100%	N/A	$1.08	0.00	0.00
Wyoming	School	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	269	15	$6,819	65%	98%	$2.97	2	2
Wyoming	School	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	215	7	$2,273	10%	94%	$1.98	0.26	0.26
Wyoming	School	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	107	13	$1,645	75%	65%	$1.94	0.63	0.63
Wyoming	School	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	269	15	$3,409	75%	76%	$1.48	1	1
Wyoming	School	Cooling Chillers	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	121	12	$5,450	25%	75%	$5.98	0.25	0.25
Wyoming	School	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	269	40	$97,388	2.0%	**%	$65.26	0.00	0.00
Wyoming	School	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	0.93	25	$4,936	75%	85%	$525.82	0.00	0.00
Wyoming	School	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	269	15	$19,485	10%	75%	$8.48	0.21	0.21
Wyoming	School	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	380	25	$107	80%	90%	$0.03	2	2
Wyoming	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	228	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	438	15	$2,067	100%	N/A	$0.55	0.00	0.00
Wyoming	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	Existing	2,946	15	$-44427.158	26%	N/A	$-1.77	15	21

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency - 11.5 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	202	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	School	Cooling DX Evap	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	387	15	$1,653	100%	N/A	$0.50	0.00	0.00
Wyoming	School	Cooling DX Evap	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	DX Package 135 to 240 kBTU/hr - Standard Efficiency 11.0 EER	Per Building	New	2,602	15	$-33190.302	26%	N/A	$-1.50	2	2
Wyoming	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	496	15	$4,871	25%	94%	$1.15	34	34
Wyoming	School	Cooling Dx Evap	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	1,490	15	$59,235	15%	68%	$4.66	43	43
Wyoming	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	496	15	$6,819	65%	98%	$1.61	87	87
Wyoming	School	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	745	10	$14,731	10%	60%	$2.89	11	11
Wyoming	School	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	496	5	$4,156	95%	72%	$2.00	87	87
Wyoming	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,242	15	$40,594	50%	94%	$3.83	139	139
Wyoming	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	496	15	$3,409	75%	76%	$0.80	59	59
Wyoming	School	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	124	18	$4,676	45%	65%	$4.03	7	7
Wyoming	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	223	12	$5,450	25%	75%	$3.24	8	8
Wyoming	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	496	40	$97,388	2.0%	**%	$35.38	0.00	0.00
Wyoming	School	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	248	12	$513	10%	39%	$0.27	1	1
Wyoming	School	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	19	25	$10,262	45%	67%	$53.30	1	1
Wyoming	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1	25	$4,936	25%	85%	$285.03	0.07	0.07
Wyoming	School	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	149	20	$3,390	45%	59%	$2.32	7	7
Wyoming	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	89	20	$594	45%	85%	$0.68	6	6
Wyoming	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$18,316	15%	83%	.	0.00	0.00
Wyoming	School	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$5,650	15%	90%	.	0.00	0.00
Wyoming	School	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$13,180	10%	85%	.	0.00	0.00
Wyoming	School	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$36,556	10%	74%	.	0.00	0.00
Wyoming	School	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	621	7	$3,841	90%	85%	$1.16	91	91
Wyoming	School	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	1,248	10	$4,529	35%	68%	$0.53	51	51

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	701	25	$107	15%	90%	$0.02	15	15
Wyoming	School	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	768	25	$659	15%	70%	$0.09	13	13
Wyoming	School	Cooling Dx Evap	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	408	15	$2,598	25%	94%	$0.75	2	2
Wyoming	School	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	408	15	$6,819	65%	98%	$1.96	7	7
Wyoming	School	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,021	15	$40,594	50%	94%	$4.66	12	12
Wyoming	School	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	408	15	$3,409	75%	76%	$0.98	5	5
Wyoming	School	Cooling Dx Evap	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	183	12	$5,450	25%	75%	$3.94	0.75	0.75
Wyoming	School	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	408	40	$97,388	2.0%	**%	$43.02	0.00	0.00
Wyoming	School	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$4,936	75%	85%	$346.60	0.01	0.01
Wyoming	School	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	73	20	$594	45%	85%	$0.83	0.36	0.36
Wyoming	School	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	408	15	$19,485	10%	75%	$5.59	0.63	0.63
Wyoming	School	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	577	25	$107	80%	90%	$0.02	6	6
Wyoming	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	91	6	$1	100%	N/A	$0.00	64	64
Wyoming	School	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	91	6	$1	100%	N/A	$0.00	7	7
Wyoming	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	489	4	$551	100%	N/A	$0.32	19	19
Wyoming	School	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	489	4	$551	100%	N/A	$0.32	14	14
Wyoming	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.92	100%	N/A	$0.01	0.00	0.00
Wyoming	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	17	20	$0.46	100%	N/A	$0.00	0.00	0.10
Wyoming	School	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	123	20	$17	8.8%	100%	$0.01	7	7
Wyoming	School	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.92	100%	N/A	$0.01	0.00	0.00
Wyoming	School	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	17	20	$0.46	100%	N/A	$0.00	0.00	0.05
Wyoming	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	Existing	2,264	15	$8,449	100%	N/A	$0.44	0.00	0.00
Wyoming	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	Existing	556	15	$4,871	25%	94%	$1.03	0.00	0.00
Wyoming	School	Heat Pump	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	11,739	15	$59,235	15%	68%	$0.59	0.00	0.00

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Wyoming	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	556	15	$6,819	65%	98%	$1.44	0.00	0.00
Wyoming	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,913	15	$3,409	75%	76%	$0.10	0.00	0.00
Wyoming	School	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	978	18	$4,676	45%	65%	$0.51	0.00	0.00
Wyoming	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	5,034	14	$17,673	5.0%	94%	$0.43	0.00	0.00
Wyoming	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	1,760	12	$5,450	25%	75%	$0.41	0.00	0.00
Wyoming	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	556	40	$97,388	2.0%	**%	$31.56	0.00	0.00
Wyoming	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	Existing	8,141	30	$23,387	5.0%	N/A	$6.08	0.00	0.00
Wyoming	School	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,934	12	$513	10%	39%	$0.02	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	6,545	25	$10,262	45%	67%	$0.16	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	833	25	$4,936	25%	85%	$0.59	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,173	20	$3,390	45%	59%	$0.30	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	704	20	$594	45%	85%	$0.09	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	9,610	25	$18,316	15%	83%	$0.19	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,867	25	$5,650	15%	90%	$0.30	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$13,180	10%	85%	.	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$36,556	10%	74%	.	0.00	0.00
Wyoming	School	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,891	7	$3,841	90%	85%	$0.15	0.00	0.00
Wyoming	School	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	1,248	10	$4,529	35%	68%	$0.53	0.00	0.00
Wyoming	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	5,526	25	$107	15%	90%	$0.00	0.00	0.00
Wyoming	School	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	6,054	25	$659	15%	70%	$0.01	0.00	0.00
Wyoming	School	Heat Pump	Air Source Heat Pump 135 to 240 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	10.6 EER, 3.2 COP	Per Building	New	2,100	15	$6,759	100%	N/A	$0.38	0.00	0.00
Wyoming	School	Heat Pump	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Demand Controlled Ventilation (CO2 sensors)	Constant Ventilation	Per Building	New	481	15	$2,598	25%	94%	$0.63	0.00	0.00
Wyoming	School	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	481	15	$6,819	65%	98%	$1.66	0.00	0.00
Wyoming	School	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	3,386	15	$3,409	75%	76%	$0.12	0.00	0.00
Wyoming	School	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	4,356	14	$17,673	5.0%	94%	$0.49	0.00	0.00

Table C-2.2. Commercial Measure Details

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Wyoming	School	Heat Pump	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	1,523	12	$5,450	25%	75%	$0.48	0.00	0.00
Wyoming	School	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	481	40	$97,388	2.0%	**%	$36.47	0.00	0.00
Wyoming	School	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 135 to 240 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	10.6 EER, 3.2 COP	Per Building	New	7,545	30	$69,180	5.0%	N/A	$3.37	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	721	25	$4,936	75%	85%	$0.68	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	609	20	$594	45%	85%	$0.10	0.00	0.00
Wyoming	School	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,616	25	$5,650	35%	90%	$0.35	0.00	0.00
Wyoming	School	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	3,386	15	$19,485	10%	75%	$0.67	0.00	0.00
Wyoming	School	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	4,783	25	$107	80%	90%	$0.00	0.00	0.00
Wyoming	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	1,825	8	$507	5.0%	95%	$0.05	72	72
Wyoming	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	3,209	8	$949	75%	70%	$0.05	1,405	1,405
Wyoming	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	2,665	15	$3,601	62%	90%	$0.16	1,243	1,243
Wyoming	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	932	8	$3,564	90%	39%	$0.65	213	213
Wyoming	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	26	13	$39	75%	95%	$0.19	15	15
Wyoming	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	17,751	17	$12,061	5.0%	95%	$0.07	704	704
Wyoming	School	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	1,825	8	$507	5.0%	95%	$0.05	7	7
Wyoming	School	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	3,209	8	$949	75%	70%	$0.05	145	145
Wyoming	School	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	2,665	15	$3,601	62%	90%	$0.16	117	117
Wyoming	School	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	932	8	$3,564	90%	39%	$0.65	22	22
Wyoming	School	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	26	13	$39	75%	95%	$0.19	1	1
Wyoming	School	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	17,751	17	$12,061	5.0%	95%	$0.07	59	59
Wyoming	School	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	1,201	10	$1,622	10%	95%	$0.20	84	84
Wyoming	School	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,994	8	$11,167	30%	81%	$0.38	897	897
Wyoming	School	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,745	8	$8,375	30%	81%	$0.38	0.00	0.00
Wyoming	School	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	301	6	$111	10%	80%	$0.08	17	17

Table C-2.2. Commercial Measure Details

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Wyoming	School	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	185	6	$93	10%	80%	$0.11	10	10
Wyoming	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,819	13	$1,920	100%	N/A	$0.09	0.00	0.00
Wyoming	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	4,847	13	$7,192	100%	N/A	$0.19	2,034	2,084
Wyoming	School	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	9,303	13	$57,046	25%	N/A	$0.78	1,301	1,333
Wyoming	School	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	3,786	8	$3,564	75%	39%	$0.16	798	798
Wyoming	School	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,133	15	$848	100%	N/A	$0.09	0.00	0.00
Wyoming	School	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,395	15	$3,430	95%	N/A	$0.29	356	359
Wyoming	School	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,247	29	$24,626	50%	N/A	$1.88	11	11
Wyoming	School	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	790	19	$50	25%	N/A	$0.01	0.00	0.00
Wyoming	School	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	388	15	$15,621	100%	N/A	$4.72	0.00	0.00
Wyoming	School	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	381	8	$3,564	75%	39%	$1.59	85	85
Wyoming	School	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	172	11	$66	95%	50%	$0.05	68	68
Wyoming	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	34	13	$29	95%	98%	$0.11	26	26
Wyoming	School	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	1,200	10	$1,622	10%	95%	$0.20	8	8
Wyoming	School	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	4,321	8	$11,167	30%	81%	$0.44	83	83
Wyoming	School	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,240	8	$8,375	30%	81%	$0.44	0.00	0.00
Wyoming	School	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	233	6	$57	10%	80%	$0.05	1	1
Wyoming	School	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	105	6	$41	10%	80%	$0.08	0.68	0.68
Wyoming	School	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	34	13	$29	95%	98%	$0.11	2	2

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Wyoming	School	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	4,803	13	$13,424	100%	N/A	$0.35	373	375
Wyoming	School	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,782	8	$3,564	75%	39%	$0.16	86	86
Wyoming	School	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,701	4	$64	85%	N/A	$0.00	0.00	430
Wyoming	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,240	1	$42	100%	N/A	$0.00	0.00	0.00
Wyoming	School	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	914	1	$32	100%	N/A	$0.00	0.00	0.00
Wyoming	School	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,732	12	$798	15%	N/A	$0.03	15	242
Wyoming	School	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	196	8	$3,564	75%	39%	$3.08	13	13
Wyoming	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	2	7	$0.56	10%	90%	$0.05	0.15	0.15
Wyoming	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	141	4	$0.00	75%	45%	$0.00	39	39
Wyoming	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	20	10	$0.10	95%	75%	$0.00	12	12
Wyoming	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	Existing	621	10	$439	95%	86%	$0.10	422	422
Wyoming	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	7	4	$2	5.0%	86%	$0.12	0.25	0.25
Wyoming	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	649	4	$129	60%	90%	$0.06	293	293
Wyoming	School	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	2	7	$0.56	10%	90%	$0.05	0.01	0.01
Wyoming	School	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	141	4	$0.00	75%	45%	$0.00	4	4
Wyoming	School	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	20	10	$0.10	95%	75%	$0.00	1	1
Wyoming	School	Other Plug Load	Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Per Building	New	621	10	$439	95%	86%	$0.10	40	40
Wyoming	School	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	7	4	$2	5.0%	86%	$0.12	0.02	0.02
Wyoming	School	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	649	4	$129	60%	90%	$0.06	31	31
Wyoming	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	286	6	$312	100%	N/A	$0.23	6	6
Wyoming	School	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	286	6	$312	100%	N/A	$0.23	1	1
Wyoming	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	413	6	$48	100%	N/A	$0.02	30	30
Wyoming	School	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	413	6	$48	100%	N/A	$0.02	0.00	0.00
Wyoming	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	Existing	353	8	$30	15%	45%	$0.01	6	6
Wyoming	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	Existing	586	15	$142	5.0%	77%	$0.03	6	6

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Wyoming	School	Refrigeration	Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Per Building	Existing	405	15	$43	5.0%	95%	$0.01	5	5
Wyoming	School	Refrigeration	Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Per Building	Existing	30	15	$19	5.0%	95%	$0.08	0.41	0.41
Wyoming	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	Existing	396	10	$329	25%	80%	$0.12	23	23
Wyoming	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	Existing	538	10	$446	25%	80%	$0.12	31	31
Wyoming	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	Existing	105	10	$3,300	5.0%	68%	$4.58	1	1
Wyoming	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	Existing	58	8	$5	1.0%	95%	$0.02	0.16	0.16
Wyoming	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	Existing	8	12	$8	95%	77%	$0.13	1	1
Wyoming	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	Existing	491	3	$77	10%	85%	$0.06	11	11
Wyoming	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	Existing	6	12	$-1.6370899	95%	81%	$-0.03	1	1
Wyoming	School	Refrigeration	Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Per Building	Existing	222	13	$31	25%	90%	$0.02	14	14
Wyoming	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	Existing	12	4	$9	95%	20%	$0.21	0.67	0.67
Wyoming	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	Existing	11	10	$2	2.5%	85%	$0.03	0.06	0.06
Wyoming	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	Existing	59	15	$65	10%	95%	$0.13	1	1
Wyoming	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	Existing	7	15	$6	10%	95%	$0.11	0.19	0.19
Wyoming	School	Refrigeration	Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Per Building	New	353	8	$30	15%	45%	$0.01	0.72	0.72
Wyoming	School	Refrigeration	Case Electronically Commutated Motor	ECM Case Fans	Standard Efficiency Motor	Per Building	New	586	15	$142	5.0%	77%	$0.03	0.60	0.60
Wyoming	School	Refrigeration	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Per Building	New	396	10	$329	25%	80%	$0.12	2	2
Wyoming	School	Refrigeration	Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Per Building	New	538	10	$446	25%	80%	$0.12	3	3
Wyoming	School	Refrigeration	Demand Control Defrost - Hot Gas	Refrigerant Defrost	Defrost - Electric	Per Building	New	105	10	$3,300	5.0%	68%	$4.58	0.09	0.09
Wyoming	School	Refrigeration	Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Per Building	New	58	8	$5	1.0%	95%	$0.02	0.01	0.01
Wyoming	School	Refrigeration	Glass Door ENERGY STAR Refrigerators/Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Per Building	New	8	12	$8	95%	77%	$0.13	0.18	0.18
Wyoming	School	Refrigeration	Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Per Building	New	245	3	$29	5.0%	90%	$0.04	0.34	0.34
Wyoming	School	Refrigeration	Solid Door ENERGY STAR Refrigerators/Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Per Building	New	6	12	$-1.6370899	95%	81%	$-0.03	0.15	0.15
Wyoming	School	Refrigeration	Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Per Building	New	12	4	$9	95%	20%	$0.21	0.07	0.07
Wyoming	School	Refrigeration	Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Per Building	New	11	10	$2	2.5%	85%	$0.03	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Refrigeration	Walk-In Electronically Commutated Motor	ECM Evaporator Fans	Standard Efficiency Motor	Per Building	New	59	15	$65	10%	95%	$0.13	0.15	0.15
Wyoming	School	Refrigeration	Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Per Building	New	7	15	$6	10%	95%	$0.11	0.01	0.01
Wyoming	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	216	20	$588	100%	N/A	$0.28	0.00	0.00
Wyoming	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	242	20	$789	100%	N/A	$0.33	37	45
Wyoming	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	190	20	$46	100%	N/A	$0.02	0.00	0.00
Wyoming	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$21	100%	N/A	$0.04	0.00	0.00
Wyoming	School	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	1,442	20	$161	8.8%	100%	$0.01	78	78
Wyoming	School	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	216	20	$588	100%	N/A	$0.28	0.00	0.00
Wyoming	School	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	242	20	$789	100%	N/A	$0.33	9	10
Wyoming	School	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	190	20	$46	100%	N/A	$0.02	0.00	0.00
Wyoming	School	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$21	100%	N/A	$0.04	0.00	0.00
Wyoming	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	130	9	$17	100%	N/A	$0.02	83	85
Wyoming	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	450	4	$1,687	10%	50%	$1.07	14	14
Wyoming	School	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	130	9	$17	100%	N/A	$0.02	9	9
Wyoming	School	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	448	4	$1,687	10%	50%	$1.07	1	1
Wyoming	School	Space Heat	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	14,574	15	$59,235	15%	68%	$0.06	1,255	1,255
Wyoming	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	38,191	15	$3,409	75%	76%	$0.01	2,276	2,276
Wyoming	School	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	9,547	18	$4,676	45%	65%	$0.05	277	277
Wyoming	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	57,287	14	$17,673	5.0%	94%	$0.04	264	264
Wyoming	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	17,186	12	$5,450	25%	75%	$0.04	314	314
Wyoming	School	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	38,191	12	$513	10%	39%	$0.00	143	143
Wyoming	School	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	75,139	25	$10,262	45%	67%	$0.01	2,187	2,187
Wyoming	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	9,520	25	$4,936	25%	85%	$0.05	183	183
Wyoming	School	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	11,457	20	$3,390	45%	59%	$0.03	272	272
Wyoming	School	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	6,874	20	$594	45%	85%	$0.01	235	235
Wyoming	School	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	91,837	25	$18,316	15%	83%	$0.02	1,014	1,014
Wyoming	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	17,094	25	$5,650	15%	90%	$0.03	198	198
Wyoming	School	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$13,180	10%	85%	.	0.00	0.00
Wyoming	School	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$36,556	10%	74%	.	0.00	0.00
Wyoming	School	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	47,739	7	$3,841	90%	85%	$0.02	3,137	3,137

Table C-2.2. Commercial Measure Details

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Wyoming	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	53,940	25	$107	15%	90%	$0.00	563	563
Wyoming	School	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	59,094	25	$659	15%	70%	$0.00	472	472
Wyoming	School	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	22,622	15	$3,409	75%	76%	$0.02	131	131
Wyoming	School	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	33,933	14	$17,673	5.0%	94%	$0.06	15	15
Wyoming	School	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	10,180	12	$5,450	25%	75%	$0.07	18	18
Wyoming	School	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	5,639	25	$4,936	75%	85%	$0.09	20	20
Wyoming	School	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	4,072	20	$594	45%	85%	$0.01	8	8
Wyoming	School	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	10,125	25	$5,650	35%	90%	$0.06	17	17
Wyoming	School	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	22,622	15	$19,485	10%	75%	$0.10	15	15
Wyoming	School	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	31,951	25	$107	80%	90%	$0.00	145	145
Wyoming	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	657	10	$90	100%	N/A	$0.02	228	228
Wyoming	School	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	657	10	$90	100%	N/A	$0.02	27	27
Wyoming	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	Existing	8,378	10	$2,389	5.0%	90%	$0.04	315	315
Wyoming	School	Ventilation And Circulation	Convert Constant Volume Air System to VAV	Variable Volume Air System	Constant Volume Air System	Per Building	Existing	12,568	15	$59,235	15%	68%	$0.55	1,054	1,054
Wyoming	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	Existing	1,119	18	$2,700	95%	85%	$0.26	755	755
Wyoming	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	427	15	$128	95%	76%	$0.04	241	241
Wyoming	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	10,682	20	$2,169	55%	45%	$0.02	2,060	2,060
Wyoming	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	Existing	2,199	15	$7,115	11%	77%	$0.38	135	135
Wyoming	School	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	344	7	$97	65%	25%	$0.05	0.00	0.00
Wyoming	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	Existing	670	18	$1,705	65%	59%	$0.27	215	215
Wyoming	School	Ventilation And Circulation	Automated Exhaust VFD Control - Parking Garage CO sensor	CO Sensors	No CO Sensors	Per Building	New	6,780	10	$2,389	5.0%	90%	$0.05	24	24
Wyoming	School	Ventilation And Circulation	Cooking Hood Controls	Demand-Ventilation Control	No Controls	Per Building	New	1,119	18	$2,700	95%	85%	$0.26	64	64

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Wyoming	School	Ventilation And Circulation	Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Per Building	New	14,614	50	$48,713	15%	98%	$0.29	95	95
Wyoming	School	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	345	15	$128	95%	76%	$0.04	17	17
Wyoming	School	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	8,645	20	$2,169	55%	45%	$0.03	93	93
Wyoming	School	Ventilation And Circulation	Motor - VAV Box High Efficiency (ECM)	ECM Motor	Standard Efficiency Motor	Per Building	New	1,780	15	$7,115	11%	77%	$0.47	9	9
Wyoming	School	Ventilation And Circulation	Optimized Variable Volume Lab Hood Design	Optimized Variable Volume Lab Hood Design	Constant Volume Lab Hood Design	Per Building	New	542	18	$1,705	63%	59%	$0.34	14	14
Wyoming	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	18,705	15	$1,128	75%	N/A	$0.01	0.24	37
Wyoming	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	18,502	15	$674	75%	N/A	$0.00	0.00	0.00
Wyoming	School	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	18,705	15	$1,128	75%	N/A	$0.01	0.00	6
Wyoming	School	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	18,502	15	$674	75%	N/A	$0.00	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.06	0.71	0.88
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.08	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.09	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.07	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.09	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.10	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.08	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.06	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,569	10	$5,413	55%	94%	$0.50	11	11
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	20%	35%	$0.37	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	20%	35%	$0.08	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	20%	55%	$0.41	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	20%	55%	$0.38	0.02	0.03
Wyoming	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	425	12	$242	70%	95%	$0.08	3	4
Wyoming	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	390	12	$242	70%	94%	$0.08	3	4
Wyoming	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,276	25	$2,800	2.5%	100%	$0.04	2	2
Wyoming	School	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	313	12	$89	80%	8%	$0.04	0.27	0.27
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	499	9	$28	95%	25%	$0.01	1	1
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.09	6	6
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	2	2
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	1	1
Wyoming	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	784	10	$392	75%	75%	$0.07	6	6
Wyoming	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,577	10	$329	25%	94%	$0.01	11	11
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.06	0.06	0.06
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.08	0.00	0.00

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Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.09	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.07	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.09	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.10	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.08	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.07	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.06	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,554	10	$5,413	55%	94%	$0.51	0.87	0.87
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	20%	35%	$0.37	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	20%	35%	$0.08	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	20%	55%	$0.41	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	20%	55%	$0.38	0.00	0.00
Wyoming	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	425	12	$242	70%	95%	$0.08	0.31	0.31
Wyoming	School	Water Heat Gt 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	390	12	$242	70%	94%	$0.08	0.28	0.28
Wyoming	School	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,219	25	$2,240	2.5%	100%	$0.04	0.05	0.05
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	494	9	$0.20	95%	25%	$0.00	0.13	0.13

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.09	0.58	0.58
Wyoming	School	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	0.17	0.17
Wyoming	School	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	777	10	$392	75%	75%	$0.07	0.47	0.47
Wyoming	School	Water Heat Gt 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,545	10	$329	25%	94%	$0.01	0.82	0.82
Wyoming	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	17,036	15	$5,794	75%	N/A	$0.04	1,905	2,031
Wyoming	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,022	15	$253	100%	N/A	$0.03	0.00	0.00
Wyoming	School	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	17,036	15	$5,794	75%	N/A	$0.04	281	289
Wyoming	School	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,022	15	$253	100%	N/A	$0.03	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	262	9	$100	25%	80%	$0.06	9	10
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	57	14	$38	5.0%	97%	$0.08	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	20	14	$15	5.0%	97%	$0.09	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	99	14	$57	5.0%	97%	$0.07	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	74	14	$54	5.0%	99%	$0.09	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	37	14	$31	5.0%	99%	$0.10	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	116	14	$73	5.0%	99%	$0.08	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	36	14	$22	5.0%	94%	$0.07	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	79	14	$41	5.0%	94%	$0.06	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	1,604	10	$5,413	25%	94%	$0.49	72	72
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	20	12	$56	75%	35%	$0.37	0.00	0.05
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$2	75%	35%	$0.08	0.17	0.19
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	35	12	$108	75%	55%	$0.41	0.00	0.16
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	19	12	$54	75%	55%	$0.38	1	1
Wyoming	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	425	12	$242	75%	95%	$0.08	50	59
Wyoming	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	Existing	390	12	$242	75%	95%	$0.08	46	54
Wyoming	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	6,418	25	$2,800	2.5%	100%	$0.04	29	29
Wyoming	School	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	320	12	$89	80%	8%	$0.04	3	3
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	510	9	$28	95%	25%	$0.01	23	23
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	Existing	773	4	$234	95%	65%	$0.09	91	91
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	29	29
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	20	20
Wyoming	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	802	10	$392	75%	75%	$0.07	86	86
Wyoming	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	Existing	3,658	10	$329	25%	94%	$0.01	152	152
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	262	9	$100	25%	80%	$0.06	0.89	0.89
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	57	14	$38	5.0%	97%	$0.08	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	20	14	$15	5.0%	97%	$0.09	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	99	14	$57	5.0%	97%	$0.07	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	74	14	$54	5.0%	99%	$0.09	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	37	14	$31	5.0%	99%	$0.10	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	116	14	$73	5.0%	99%	$0.08	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	36	14	$22	5.0%	94%	$0.07	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	79	14	$41	5.0%	94%	$0.06	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	1,559	10	$5,413	25%	94%	$0.51	5	5
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	20	12	$56	75%	35%	$0.37	0.00	0.00
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$2	75%	35%	$0.08	0.01	0.01
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	35	12	$108	75%	55%	$0.41	0.00	0.02
Wyoming	School	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	19	12	$54	75%	55%	$0.38	0.11	0.11
Wyoming	School	Water Heat Le 55 Gal	Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	425	12	$242	75%	95%	$0.08	4	4
Wyoming	School	Water Heat Le 55 Gal	Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Building	New	390	12	$242	75%	95%	$0.08	4	4
Wyoming	School	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	6,238	25	$2,240	2.5%	100%	$0.04	0.80	0.80
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	496	9	$0.20	95%	25%	$0.00	2	2
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Per Building	New	773	4	$234	95%	65%	$0.09	8	8
Wyoming	School	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	2	2

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Wyoming	School	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	779	10	$392	75%	75%	$0.07	6	6
Wyoming	School	Water Heat Le 55 Gal	Water Cooled Refrigeration with Heat Recovery	Heat Recovery from refrigeration system. Applied to Water Heating Electric End use	No Heat Recovery	Per Building	New	3,556	10	$329	25%	94%	$0.01	12	12
Wyoming	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	309	4	$35	100%	N/A	$0.03	227	264
Wyoming	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	Existing	478	4	$35	95%	30%	$0.02	618	618
Wyoming	Small Office	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	309	4	$35	100%	N/A	$0.03	12	12
Wyoming	Small Office	Computers	Network PC Power Management	Network PC Power Management	No Power Management	Per Building	New	478	4	$35	95%	30%	$0.02	70	70
Wyoming	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	58	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	150	15	$127	100%	N/A	$0.10	106	135
Wyoming	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	1,243	15	$-2663.1005	7.6%	N/A	$-0.25	28	36
Wyoming	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	39	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Office	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	100	15	$101	100%	N/A	$0.12	11	11
Wyoming	Small Office	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	835	15	$-1941.5176	7.6%	N/A	$-0.27	3	3
Wyoming	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	237	15	$531	35%	98%	$0.26	268	268
Wyoming	Small Office	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	355	10	$794	10%	20%	$0.33	22	22
Wyoming	Small Office	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	237	5	$224	95%	72%	$0.23	516	516
Wyoming	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	592	15	$3,162	50%	94%	$0.63	823	823
Wyoming	Small Office	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	59	18	$364	45%	65%	$0.34	45	45
Wyoming	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	237	40	$15,377	2.0%	**%	$5.78	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	118	12	$49	40%	39%	$0.02	47	47
Wyoming	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3	25	$799	45%	67%	$0.30	2	2
Wyoming	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	0.82	25	$384	25%	85%	$0.68	0.44	0.44
Wyoming	Small Office	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	71	20	$264	45%	58%	$0.20	47	47
Wyoming	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	42	20	$46	45%	85%	$0.06	41	41

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Wyoming	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$1,426	15%	83%	.	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$440	15%	90%	.	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,026	10%	85%	.	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,847	10%	70%	.	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	296	7	$299	90%	85%	$0.10	575	575
Wyoming	Small Office	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	186	10	$434	35%	68%	$0.34	101	101
Wyoming	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	334	25	$10	15%	90%	$0.00	101	101
Wyoming	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	366	25	$63	15%	71%	$0.01	86	86
Wyoming	Small Office	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	145	15	$531	35%	98%	$0.43	15	15
Wyoming	Small Office	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	364	15	$3,162	50%	94%	$1.02	52	52
Wyoming	Small Office	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	145	40	$15,377	2.0%	**%	$9.38	0.00	0.00
Wyoming	Small Office	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	0.50	25	$384	75%	85%	$1.53	0.05	0.05
Wyoming	Small Office	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	26	20	$46	45%	85%	$0.11	1	1
Wyoming	Small Office	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	145	15	$1,518	10%	75%	$0.73	2	2
Wyoming	Small Office	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	206	25	$10	80%	90%	$0.00	28	28
Wyoming	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	8	6	$0.18	100%	N/A	$0.00	39	39
Wyoming	Small Office	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	8	6	$0.18	100%	N/A	$0.00	4	4
Wyoming	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	41	4	$47	100%	N/A	$0.32	10	10
Wyoming	Small Office	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	41	4	$47	100%	N/A	$0.32	7	7
Wyoming	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	0.90	20	$0.13	100%	N/A	$0.01	0.00	0.00
Wyoming	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.06	100%	N/A	$0.00	0.00	0.09
Wyoming	Small Office	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	17	20	$2	8.8%	100%	$0.01	6	6
Wyoming	Small Office	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	0.90	20	$0.13	100%	N/A	$0.01	0.00	0.00
Wyoming	Small Office	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.06	100%	N/A	$0.00	0.00	0.04
Wyoming	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	366	15	$473	100%	N/A	$0.15	0.00	0.00
Wyoming	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,377	15	$946	100%	N/A	$0.08	0.00	0.00
Wyoming	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	283	15	$531	35%	98%	$0.22	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	292	18	$364	45%	65%	$0.13	0.00	0.00
Wyoming	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	1,332	14	$2,610	5.0%	94%	$0.24	0.00	0.00
Wyoming	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	283	40	$15,377	2.0%	**%	$4.84	0.00	0.00
Wyoming	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	2,326	30	$28,065	5.0%	N/A	$1.14	0.00	0.00
Wyoming	Small Office	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	878	12	$49	40%	39%	$0.01	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,032	25	$799	45%	67%	$0.08	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	221	25	$384	25%	85%	$0.17	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	351	20	$264	45%	58%	$0.08	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	210	20	$46	45%	85%	$0.02	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	2,488	25	$1,426	15%	83%	$0.06	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	483	25	$440	15%	90%	$0.09	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,026	10%	85%	.	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,847	10%	70%	.	0.00	0.00
Wyoming	Small Office	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,463	7	$299	90%	85%	$0.04	0.00	0.00
Wyoming	Small Office	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	186	10	$434	35%	68%	$0.34	0.00	0.00
Wyoming	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,654	25	$10	15%	90%	$0.00	0.00	0.00
Wyoming	Small Office	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,812	25	$63	15%	71%	$0.00	0.00	0.00
Wyoming	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	178	15	$378	100%	N/A	$0.25	0.00	0.00
Wyoming	Small Office	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	625	15	$757	100%	N/A	$0.14	0.00	0.00
Wyoming	Small Office	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	124	15	$531	35%	98%	$0.50	0.00	0.00
Wyoming	Small Office	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	585	14	$2,610	5.0%	94%	$0.54	0.00	0.00
Wyoming	Small Office	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	124	40	$15,377	2.0%	**%	$11.01	0.00	0.00
Wyoming	Small Office	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	1,157	30	$14,416	5.0%	N/A	$1.18	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	97	25	$384	75%	85%	$0.39	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	92	20	$46	45%	85%	$0.05	0.00	0.00
Wyoming	Small Office	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	212	25	$440	35%	90%	$0.21	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	514	15	$1,518	10%	75%	$0.35	0.00	0.00
Wyoming	Small Office	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	727	25	$10	80%	90%	$0.00	0.00	0.00
Wyoming	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	142	8	$39	5.0%	95%	$0.05	36	36
Wyoming	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	421	8	$264	75%	70%	$0.11	1,196	1,196
Wyoming	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	349	15	$472	62%	90%	$0.16	1,056	1,056
Wyoming	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	149	8	$277	90%	53%	$0.32	303	303
Wyoming	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	2	13	$3	75%	95%	$0.19	9	9
Wyoming	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	1,382	17	$939	5.0%	95%	$0.07	355	355
Wyoming	Small Office	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	142	8	$39	5.0%	95%	$0.05	3	3
Wyoming	Small Office	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	421	8	$264	75%	70%	$0.11	123	123
Wyoming	Small Office	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	349	15	$472	62%	90%	$0.16	99	99
Wyoming	Small Office	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	149	8	$277	90%	53%	$0.32	31	31
Wyoming	Small Office	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	2	13	$3	75%	95%	$0.19	0.88	0.88
Wyoming	Small Office	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	1,382	17	$939	5.0%	95%	$0.07	29	29
Wyoming	Small Office	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	101	10	$126	0.5%	95%	$0.18	2	2
Wyoming	Small Office	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,375	8	$1,518	30%	78%	$0.19	1,449	1,449
Wyoming	Small Office	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,031	8	$1,138	30%	78%	$0.19	0.00	0.00
Wyoming	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	195	13	$93	100%	N/A	$0.06	0.00	0.00
Wyoming	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	268	13	$453	100%	N/A	$0.21	695	733
Wyoming	Small Office	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	594	13	$3,729	25%	N/A	$0.80	514	542
Wyoming	Small Office	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	392	8	$277	75%	53%	$0.12	660	660
Wyoming	Small Office	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	35	15	$21	100%	N/A	$0.07	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	44	15	$90	95%	N/A	$0.24	70	71
Wyoming	Small Office	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	39	25	$656	50%	N/A	$1.66	2	2
Wyoming	Small Office	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	25	17	$0.42	25%	N/A	$0.00	0.00	0.00
Wyoming	Small Office	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	12	15	$416	100%	N/A	$3.92	0.00	0.00
Wyoming	Small Office	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	14	8	$277	75%	53%	$3.29	28	28
Wyoming	Small Office	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	35	11	$13	95%	50%	$0.05	91	91
Wyoming	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	7	13	$6	95%	98%	$0.11	35	35
Wyoming	Small Office	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	91	10	$126	0.5%	95%	$0.20	0.20	0.20
Wyoming	Small Office	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,081	8	$1,518	30%	78%	$0.24	130	130
Wyoming	Small Office	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	810	8	$1,138	30%	78%	$0.24	0.00	0.00
Wyoming	Small Office	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	7	13	$6	95%	98%	$0.11	3	3
Wyoming	Small Office	Lighting Interior Other	Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	366	13	$276	100%	N/A	$0.10	175	177
Wyoming	Small Office	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	352	8	$277	75%	53%	$0.13	68	68
Wyoming	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,167	4	$17	85%	N/A	$0.00	0.00	271
Wyoming	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,021	1	$11	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	272	1	$8	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Office	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,177	12	$215	15%	N/A	$0.02	36	346
Wyoming	Small Office	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	58	8	$277	75%	53%	$0.81	47	47
Wyoming	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	1	7	$0.46	10%	90%	$0.05	0.84	0.84
Wyoming	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	13	4	$0.00	75%	45%	$0.00	24	24

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Wyoming	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	132	10	$0.65	95%	75%	$0.00	512	512
Wyoming	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	5	4	$0.22	5.0%	86%	$0.01	1	1
Wyoming	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	303	4	$60	60%	90%	$0.06	887	887
Wyoming	Small Office	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	1	7	$0.46	10%	90%	$0.05	0.08	0.08
Wyoming	Small Office	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	13	4	$0.00	75%	45%	$0.00	2	2
Wyoming	Small Office	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	132	10	$0.65	95%	75%	$0.00	48	48
Wyoming	Small Office	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	5	4	$0.22	5.0%	86%	$0.01	0.14	0.14
Wyoming	Small Office	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	303	4	$60	60%	90%	$0.06	96	96
Wyoming	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	27	6	$29	100%	N/A	$0.23	4	4
Wyoming	Small Office	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	27	6	$29	100%	N/A	$0.23	0.69	0.69
Wyoming	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	77	6	$9	100%	N/A	$0.02	37	37
Wyoming	Small Office	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	77	6	$9	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	30	20	$82	100%	N/A	$0.28	0.00	0.00
Wyoming	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	34	20	$110	100%	N/A	$0.33	34	41
Wyoming	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	26	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	8	20	$2	100%	N/A	$0.04	0.00	0.00
Wyoming	Small Office	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	202	20	$22	8.8%	100%	$0.01	71	71
Wyoming	Small Office	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	30	20	$82	100%	N/A	$0.28	0.00	0.00
Wyoming	Small Office	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	34	20	$110	100%	N/A	$0.33	8	9
Wyoming	Small Office	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	26	20	$6	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Office	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	8	20	$2	100%	N/A	$0.04	0.00	0.00
Wyoming	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	Existing	27	9	$3	100%	N/A	$0.02	112	115
Wyoming	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	Existing	93	4	$352	10%	50%	$1.07	20	20
Wyoming	Small Office	Servers	Server - High Efficiency	High Efficiency Server	High Efficiency Server	Per Building	New	27	9	$3	100%	N/A	$0.02	13	13
Wyoming	Small Office	Servers	Server Virtualization	Server Virtualization	No Virtualization	Per Building	New	93	4	$352	10%	50%	$1.07	2	2
Wyoming	Small Office	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	343	18	$364	45%	65%	$0.10	115	115
Wyoming	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	2,060	14	$2,610	5.0%	94%	$0.15	110	110
Wyoming	Small Office	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	1,373	12	$49	40%	39%	$0.00	241	241
Wyoming	Small Office	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	1,598	25	$799	45%	67%	$0.05	539	539

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	342	25	$384	25%	85%	$0.11	78	78
Wyoming	Small Office	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	412	20	$264	45%	58%	$0.06	115	115
Wyoming	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	247	20	$46	45%	85%	$0.02	100	100
Wyoming	Small Office	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,303	25	$1,426	15%	83%	$0.04	432	432
Wyoming	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	614	25	$440	15%	90%	$0.07	84	84
Wyoming	Small Office	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$1,026	10%	85%	.	0.00	0.00
Wyoming	Small Office	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$2,847	10%	70%	.	0.00	0.00
Wyoming	Small Office	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	1,717	7	$299	90%	85%	$0.03	1,338	1,338
Wyoming	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	1,940	25	$10	15%	90%	$0.00	240	240
Wyoming	Small Office	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	2,125	25	$63	15%	71%	$0.00	205	205
Wyoming	Small Office	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	908	14	$2,610	5.0%	94%	$0.35	4	4
Wyoming	Small Office	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	150	25	$384	75%	85%	$0.25	6	6
Wyoming	Small Office	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	109	20	$46	45%	85%	$0.04	2	2
Wyoming	Small Office	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	271	25	$440	35%	90%	$0.16	5	5
Wyoming	Small Office	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	605	15	$1,518	10%	75%	$0.26	4	4
Wyoming	Small Office	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	855	25	$10	80%	90%	$0.00	44	44
Wyoming	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	52	10	$7	100%	N/A	$0.02	117	117
Wyoming	Small Office	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	52	10	$7	100%	N/A	$0.02	14	14
Wyoming	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	34	15	$10	95%	76%	$0.03	133	133
Wyoming	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	859	20	$169	55%	45%	$0.02	1,142	1,142
Wyoming	Small Office	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	26	7	$7	65%	25%	$0.05	0.00	0.00
Wyoming	Small Office	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	29	15	$10	95%	76%	$0.04	10	10
Wyoming	Small Office	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	731	20	$169	55%	45%	$0.02	56	56
Wyoming	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	452	15	$241	75%	N/A	$0.06	0.05	5
Wyoming	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	447	15	$144	75%	N/A	$0.04	0.00	0.00

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	443	15	$241	75%	N/A	$0.06	0.00	0.95
Wyoming	Small Office	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	438	15	$144	75%	N/A	$0.04	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	37	10	$421	55%	80%	$1.62	1	1
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	90%	35%	$0.37	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	90%	35%	$0.08	0.02	0.02
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	90%	55%	$0.41	0.00	0.02
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	90%	55%	$0.38	0.16	0.20
Wyoming	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	151	25	$800	2.5%	100%	$0.53	0.33	0.33
Wyoming	Small Office	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	30%	$0.45	0.15	0.15
Wyoming	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	12	9	$4	95%	25%	$0.06	0.25	0.25
Wyoming	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	18	10	$59	75%	85%	$0.46	1	1
Wyoming	Small Office	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	36	10	$421	55%	80%	$1.67	0.10	0.10
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	90%	35%	$0.37	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	90%	35%	$0.08	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	90%	55%	$0.41	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	90%	55%	$0.38	0.01	0.01
Wyoming	Small Office	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	147	25	$640	2.5%	100%	$0.43	0.00	0.00
Wyoming	Small Office	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	11	9	$0.03	95%	25%	$0.00	0.01	0.01
Wyoming	Small Office	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	18	10	$59	75%	85%	$0.47	0.07	0.07

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	412	15	$1,241	75%	N/A	$0.35	298	308
Wyoming	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	24	15	$54	100%	N/A	$0.26	0.00	0.00
Wyoming	Small Office	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	403	15	$1,241	75%	N/A	$0.36	43	44
Wyoming	Small Office	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	24	15	$54	100%	N/A	$0.26	0.00	0.00
Wyoming	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	38	10	$421	25%	94%	$1.59	10	10
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	4	12	$13	75%	35%	$0.37	0.00	0.08
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.93	12	$0.59	75%	35%	$0.08	0.24	0.27
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	8	12	$25	75%	55%	$0.41	0.00	0.23
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	4	12	$12	75%	55%	$0.38	1	2
Wyoming	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	155	25	$800	2.5%	100%	$0.51	4	4
Wyoming	Small Office	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	7	12	$25	80%	30%	$0.44	2	2
Wyoming	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	12	9	$4	95%	25%	$0.05	3	3
Wyoming	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	19	10	$59	75%	85%	$0.45	14	14
Wyoming	Small Office	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	36	10	$421	25%	94%	$1.67	0.85	0.85
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	4	12	$13	75%	35%	$0.37	0.00	0.01
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.93	12	$0.59	75%	35%	$0.08	0.02	0.02
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	8	12	$25	75%	55%	$0.41	0.00	0.03
Wyoming	Small Office	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	4	12	$12	75%	55%	$0.38	0.16	0.16
Wyoming	Small Office	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	147	25	$640	2.5%	100%	$0.43	0.12	0.12

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Wyoming	Small Office	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	11	9	$0.03	95%	25%	$0.00	0.29	0.29
Wyoming	Small Office	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	18	10	$59	75%	85%	$0.47	1	1
Wyoming	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	178	4	$20	100%	N/A	$0.03	13	13
Wyoming	Small Retail	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	178	4	$20	100%	N/A	$0.03	0.73	0.73
Wyoming	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	201	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	516	15	$660	100%	N/A	$0.15	0.00	0.00
Wyoming	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	4,273	15	$-13826.457	43%	N/A	$-0.38	23	30
Wyoming	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	150	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Retail	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	384	15	$528	100%	N/A	$0.16	0.00	0.00
Wyoming	Small Retail	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	3,186	15	$-10080.096	43%	N/A	$-0.37	2	2
Wyoming	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	673	15	$1,697	80%	98%	$0.30	107	107
Wyoming	Small Retail	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	1,010	10	$4,125	10%	80%	$0.60	15	15
Wyoming	Small Retail	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	673	5	$1,164	95%	72%	$0.41	85	85
Wyoming	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,683	15	$10,104	50%	94%	$0.70	137	137
Wyoming	Small Retail	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	168	18	$1,164	45%	65%	$0.44	7	7
Wyoming	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	673	40	$49,130	2.0%	**%	$6.50	0.00	0.00
Wyoming	Small Retail	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	336	12	$135	10%	39%	$0.02	1	1
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	26	25	$2,554	45%	66%	$0.28	1	1
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	2	25	$1,228	25%	85%	$1.07	0.07	0.07
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	202	20	$843	45%	57%	$0.26	7	7
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	121	20	$148	45%	85%	$0.07	6	6
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$4,559	15%	82%	.	0.00	0.00
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$1,406	15%	90%	.	0.00	0.00
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,280	10%	85%	.	0.00	0.00

Table C-2.2. Commercial Measure Details

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Wyoming	Small Retail	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,099	10%	70%	.	0.00	0.00
Wyoming	Small Retail	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	841	7	$956	90%	85%	$0.13	96	96
Wyoming	Small Retail	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	472	10	$1,197	35%	68%	$0.37	15	15
Wyoming	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	951	25	$28	15%	90%	$0.00	17	17
Wyoming	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	1,042	25	$174	15%	71%	$0.01	14	14
Wyoming	Small Retail	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	466	15	$1,697	80%	98%	$0.43	7	7
Wyoming	Small Retail	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	1,167	15	$10,104	50%	94%	$1.02	9	9
Wyoming	Small Retail	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	466	40	$49,130	2.0%	**%	$9.37	0.00	0.00
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$1,228	75%	85%	$1.98	0.01	0.01
Wyoming	Small Retail	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	84	20	$148	45%	85%	$0.12	0.31	0.31
Wyoming	Small Retail	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	466	15	$4,850	10%	75%	$0.80	0.54	0.54
Wyoming	Small Retail	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	659	25	$28	80%	90%	$0.00	5	5
Wyoming	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	34	6	$0.74	100%	N/A	$0.00	13	13
Wyoming	Small Retail	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	34	6	$0.74	100%	N/A	$0.00	1	1
Wyoming	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	24	4	$27	100%	N/A	$0.32	0.52	0.52
Wyoming	Small Retail	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	24	4	$27	100%	N/A	$0.32	0.38	0.38
Wyoming	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	2	20	$0.32	100%	N/A	$0.01	0.00	0.00
Wyoming	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	6	20	$0.16	100%	N/A	$0.00	0.00	0.01
Wyoming	Small Retail	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	43	20	$6	8.8%	100%	$0.01	1	1
Wyoming	Small Retail	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	2	20	$0.32	100%	N/A	$0.01	0.00	0.00
Wyoming	Small Retail	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	6	20	$0.16	100%	N/A	$0.00	0.00	0.01
Wyoming	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	921	15	$2,457	100%	N/A	$0.31	0.00	0.00
Wyoming	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	3,223	15	$4,915	100%	N/A	$0.18	0.00	0.00
Wyoming	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	944	15	$1,697	80%	98%	$0.21	0.00	0.00
Wyoming	Small Retail	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	745	18	$1,164	45%	65%	$0.17	0.00	0.00
Wyoming	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	3,057	14	$8,342	5.0%	94%	$0.33	0.00	0.00

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Wyoming	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	944	40	$49,130	2.0%	**%	$4.63	0.00	0.00
Wyoming	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	5,984	30	$45,711	5.0%	N/A	$2.30	0.00	0.00
Wyoming	Small Retail	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,236	12	$135	10%	39%	$0.01	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	3,998	25	$2,554	45%	66%	$0.06	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	508	25	$1,228	25%	85%	$0.24	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	894	20	$843	45%	57%	$0.10	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	536	20	$148	45%	85%	$0.03	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	5,589	25	$4,559	15%	82%	$0.08	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,088	25	$1,406	15%	90%	$0.13	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,280	10%	85%	.	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,099	10%	70%	.	0.00	0.00
Wyoming	Small Retail	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,727	7	$956	90%	85%	$0.05	0.00	0.00
Wyoming	Small Retail	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	472	10	$1,197	35%	68%	$0.37	0.00	0.00
Wyoming	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	4,211	25	$28	15%	90%	$0.00	0.00	0.00
Wyoming	Small Retail	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,614	25	$174	15%	71%	$0.00	0.00	0.00
Wyoming	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	560	15	$1,966	100%	N/A	$0.41	0.00	0.00
Wyoming	Small Retail	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	1,848	15	$3,932	100%	N/A	$0.25	0.00	0.00
Wyoming	Small Retail	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	511	15	$1,697	80%	98%	$0.39	0.00	0.00
Wyoming	Small Retail	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	1,657	14	$8,342	5.0%	94%	$0.61	0.00	0.00
Wyoming	Small Retail	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	511	40	$49,130	2.0%	**%	$8.55	0.00	0.00
Wyoming	Small Retail	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	3,701	30	$74,849	5.0%	N/A	$1.91	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	275	25	$1,228	75%	85%	$0.44	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	291	20	$148	45%	85%	$0.05	0.00	0.00
Wyoming	Small Retail	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	590	25	$1,406	35%	90%	$0.24	0.00	0.00
Wyoming	Small Retail	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,617	15	$4,850	10%	75%	$0.35	0.00	0.00
Wyoming	Small Retail	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	2,283	25	$28	80%	90%	$0.00	0.00	0.00

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Wyoming	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	454	8	$126	5.0%	95%	$0.05	9	9
Wyoming	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	1,166	8	$473	75%	70%	$0.07	275	275
Wyoming	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	969	15	$1,309	62%	90%	$0.16	243	243
Wyoming	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	489	8	$887	45%	53%	$0.31	41	41
Wyoming	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	49	13	$73	75%	95%	$0.19	15	15
Wyoming	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	4,418	17	$3,002	5.0%	95%	$0.07	94	94
Wyoming	Small Retail	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	454	8	$126	5.0%	95%	$0.05	1	1
Wyoming	Small Retail	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	1,166	8	$473	75%	70%	$0.07	28	28
Wyoming	Small Retail	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	969	15	$1,309	62%	90%	$0.16	23	23
Wyoming	Small Retail	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	489	8	$887	45%	53%	$0.31	4	4
Wyoming	Small Retail	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	49	13	$73	75%	95%	$0.19	1	1
Wyoming	Small Retail	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	4,418	17	$3,002	5.0%	95%	$0.07	7	7
Wyoming	Small Retail	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	564	10	$403	0.5%	95%	$0.10	0.98	0.98
Wyoming	Small Retail	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	4,705	8	$4,850	30%	84%	$0.18	435	435
Wyoming	Small Retail	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	3,528	8	$3,637	30%	84%	$0.18	0.00	0.00
Wyoming	Small Retail	Lighting Interior Fluorescent	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	Existing	423	6	$157	2.5%	80%	$0.08	3	3
Wyoming	Small Retail	Lighting Interior Fluorescent	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	Existing	317	6	$161	2.5%	80%	$0.11	2	2
Wyoming	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,146	13	$2,057	100%	N/A	$0.12	474	486
Wyoming	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,504	13	$732	100%	N/A	$0.06	0.00	0.00
Wyoming	Small Retail	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	3,580	13	$18,278	25%	N/A	$0.65	252	259
Wyoming	Small Retail	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	2,570	8	$887	5.0%	53%	$0.06	24	24
Wyoming	Small Retail	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	870	15	$336	100%	N/A	$0.05	0.00	0.00

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Wyoming	Small Retail	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,069	15	$1,413	95%	N/A	$0.15	144	145
Wyoming	Small Retail	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	955	16	$10,265	50%	N/A	$1.22	5	5
Wyoming	Small Retail	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	608	11	$2	25%	N/A	$0.00	0.00	0.00
Wyoming	Small Retail	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	302	15	$6,504	100%	N/A	$2.52	0.00	0.00
Wyoming	Small Retail	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	404	8	$887	5.0%	53%	$0.37	4	4
Wyoming	Small Retail	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	639	11	$249	95%	50%	$0.05	137	137
Wyoming	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	127	13	$109	95%	98%	$0.11	53	53
Wyoming	Small Retail	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	679	10	$403	0.5%	95%	$0.09	0.12	0.12
Wyoming	Small Retail	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	3,945	8	$4,850	30%	84%	$0.21	42	42
Wyoming	Small Retail	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	2,958	8	$3,637	30%	84%	$0.21	0.00	0.00
Wyoming	Small Retail	Lighting Interior Other	Display Case LEDs	Display Case LEDs	Standard Case Lighting	Per Building	New	327	6	$80	2.5%	80%	$0.05	0.28	0.28
Wyoming	Small Retail	Lighting Interior Other	Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Per Building	New	180	6	$70	2.5%	80%	$0.08	0.15	0.15
Wyoming	Small Retail	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	127	13	$109	95%	98%	$0.11	4	4
Wyoming	Small Retail	Lighting Interior Other	Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,059	13	$9,740	100%	N/A	$0.40	128	129
Wyoming	Small Retail	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	3,093	8	$887	5.0%	53%	$0.05	3	3
Wyoming	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,710	4	$151	85%	N/A	$0.00	0.00	48
Wyoming	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	13,740	1	$100	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	3,551	1	$79	100%	N/A	$0.00	0.00	0.00
Wyoming	Small Retail	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	15,842	12	$1,879	15%	N/A	$0.02	36	227

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Wyoming	Small Retail	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	682	8	$887	5.0%	53%	$0.22	4	4
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$1	10%	90%	$0.05	0.15	0.15
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	53	4	$0.00	10%	45%	$0.00	1	1
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	30	10	$0.15	95%	75%	$0.00	9	9
Wyoming	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	13	4	$0.72	5.0%	86%	$0.02	0.26	0.26
Wyoming	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	97	4	$19	60%	90%	$0.06	23	23
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$1	10%	90%	$0.05	0.01	0.01
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	53	4	$0.00	10%	45%	$0.00	0.11	0.11
Wyoming	Small Retail	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	30	10	$0.15	95%	75%	$0.00	0.93	0.93
Wyoming	Small Retail	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	13	4	$0.72	5.0%	86%	$0.02	0.02	0.02
Wyoming	Small Retail	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	97	4	$19	60%	90%	$0.06	2	2
Wyoming	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	107	6	$116	100%	N/A	$0.23	1	1
Wyoming	Small Retail	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	107	6	$116	100%	N/A	$0.23	0.22	0.22
Wyoming	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	68	6	$7	100%	N/A	$0.02	2	2
Wyoming	Small Retail	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	68	6	$7	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	76	20	$208	100%	N/A	$0.28	0.00	0.00
Wyoming	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	85	20	$279	100%	N/A	$0.33	7	8
Wyoming	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	67	20	$16	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	21	20	$7	100%	N/A	$0.04	0.00	0.00
Wyoming	Small Retail	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	510	20	$56	8.8%	100%	$0.01	14	14
Wyoming	Small Retail	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	76	20	$208	100%	N/A	$0.28	0.00	0.00
Wyoming	Small Retail	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	85	20	$279	100%	N/A	$0.33	1	1
Wyoming	Small Retail	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	67	20	$16	100%	N/A	$0.02	0.00	0.00
Wyoming	Small Retail	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	21	20	$7	100%	N/A	$0.04	0.00	0.00
Wyoming	Small Retail	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	743	18	$1,164	45%	65%	$0.15	14	14
Wyoming	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,459	14	$8,342	5.0%	94%	$0.23	13	13
Wyoming	Small Retail	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,973	12	$135	10%	39%	$0.01	7	7

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	5,849	25	$2,554	45%	66%	$0.04	111	111
Wyoming	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	741	25	$1,228	25%	85%	$0.17	9	9
Wyoming	Small Retail	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	891	20	$843	45%	57%	$0.09	14	14
Wyoming	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	535	20	$148	45%	85%	$0.03	12	12
Wyoming	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	7,149	25	$4,559	15%	82%	$0.06	52	52
Wyoming	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,330	25	$1,406	15%	90%	$0.11	10	10
Wyoming	Small Retail	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$3,280	10%	85%	.	0.00	0.00
Wyoming	Small Retail	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$9,099	10%	70%	.	0.00	0.00
Wyoming	Small Retail	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	3,716	7	$956	90%	85%	$0.04	164	164
Wyoming	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	4,199	25	$28	15%	90%	$0.00	29	29
Wyoming	Small Retail	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	4,600	25	$174	15%	71%	$0.00	25	25
Wyoming	Small Retail	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	2,386	14	$8,342	5.0%	94%	$0.43	0.70	0.70
Wyoming	Small Retail	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	396	25	$1,228	75%	85%	$0.31	0.94	0.94
Wyoming	Small Retail	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	286	20	$148	45%	85%	$0.05	0.40	0.40
Wyoming	Small Retail	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	712	25	$1,406	35%	90%	$0.20	0.82	0.82
Wyoming	Small Retail	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	1,590	15	$4,850	10%	75%	$0.32	0.69	0.69
Wyoming	Small Retail	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	2,246	25	$28	80%	90%	$0.00	6	6
Wyoming	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	362	10	$49	100%	N/A	$0.02	67	67
Wyoming	Small Retail	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	362	10	$49	100%	N/A	$0.02	8	8
Wyoming	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	112	15	$32	95%	76%	$0.03	36	36
Wyoming	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	2,819	20	$540	55%	45%	$0.02	312	312
Wyoming	Small Retail	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	85	7	$24	65%	25%	$0.05	0.00	0.00
Wyoming	Small Retail	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	93	15	$32	95%	76%	$0.04	2	2
Wyoming	Small Retail	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,337	20	$540	55%	45%	$0.02	15	15
Wyoming	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	694	15	$241	75%	N/A	$0.04	0.00	0.42

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	686	15	$144	75%	N/A	$0.02	0.00	0.00
Wyoming	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	665	15	$241	75%	N/A	$0.04	0.00	0.07
Wyoming	Small Retail	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	657	15	$144	75%	N/A	$0.03	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.06	0.03	0.03
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.10	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.06	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	58	10	$1,347	75%	94%	$3.38	0.18	0.18
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	10%	35%	$0.37	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	10%	35%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	10%	55%	$0.41	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	10%	55%	$0.38	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	232	25	$800	2.5%	100%	$0.34	0.02	0.02
Wyoming	Small Retail	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	11	12	$25	80%	90%	$0.29	0.03	0.03
Wyoming	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	18	9	$13	95%	25%	$0.12	0.01	0.01
Wyoming	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	29	10	$190	75%	95%	$0.95	0.09	0.09
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.06	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.10	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.06	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	55	10	$1,347	75%	94%	$3.56	0.01	0.01

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	10%	35%	$0.37	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	10%	35%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	10%	55%	$0.41	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	10%	55%	$0.38	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	221	25	$640	2.5%	100%	$0.29	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	17	9	$0.09	95%	25%	$0.00	0.00	0.00
Wyoming	Small Retail	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	27	10	$190	75%	95%	$1.01	0.00	0.00
Wyoming	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	632	15	$1,241	75%	N/A	$0.23	22	23
Wyoming	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	37	15	$54	100%	N/A	$0.17	0.00	0.00
Wyoming	Small Retail	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	605	15	$1,241	75%	N/A	$0.24	3	3
Wyoming	Small Retail	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	36	15	$54	100%	N/A	$0.17	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	Existing	37	9	$14	25%	80%	$0.06	0.40	0.47
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	8	14	$5	5.0%	97%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	2	14	$2	5.0%	97%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	14	14	$8	5.0%	97%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	10	14	$7	5.0%	99%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$4	5.0%	99%	$0.10	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	16	14	$10	5.0%	99%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	Existing	5	14	$3	5.0%	94%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	Existing	11	14	$5	5.0%	94%	$0.06	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	59	10	$1,347	25%	94%	$3.30	0.81	0.81
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	14	12	$39	75%	35%	$0.37	0.00	0.01
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	2	12	$1	75%	35%	$0.08	0.03	0.04
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	24	12	$75	75%	55%	$0.41	0.00	0.03
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	13	12	$37	75%	55%	$0.38	0.26	0.30
Wyoming	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	238	25	$800	2.5%	100%	$0.33	0.34	0.34
Wyoming	Small Retail	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	11	12	$25	80%	90%	$0.28	0.48	0.48
Wyoming	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	18	9	$13	95%	25%	$0.11	0.26	0.26
Wyoming	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	29	10	$190	75%	95%	$0.93	1	1
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Commercial	ENERGY STAR Commercial Clothes Washer - MEF = 2.43, WF = 4.0	2013 Federal Standard Clothes Washer - MEF = 1.6, WF = 8.5	Per Building	New	37	9	$14	25%	80%	$0.06	0.03	0.03
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	8	14	$5	5.0%	97%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	2	14	$2	5.0%	97%	$0.09	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 2 Clothes Washer - MEF 2.2 and WF 4.5 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	14	14	$8	5.0%	97%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	10	14	$7	5.0%	99%	$0.09	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Federal Standard 2018 Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Per Building	New	5	14	$4	5.0%	99%	$0.10	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	CEE Tier 3 Clothes Washer - MEF 2.4 and WF 4.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	16	14	$10	5.0%	99%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Federal Standard 2016 Clothes Washer - MEF 1.72 and WF 8.0 (Electric DHW & Dryer)	Per Building	New	5	14	$3	5.0%	94%	$0.07	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Clothes Washer Residential	ENERGY STAR Clothes Washer - MEF 2.0 and WF 6.0 (Electric DHW & Dryer)	Standard Clothes Washer - MEF 1.48 and WF 9.5 (Electric DHW & Dryer)	Per Building	New	11	14	$5	5.0%	94%	$0.06	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	55	10	$1,347	25%	94%	$3.55	0.06	0.06
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	14	12	$39	75%	35%	$0.37	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	2	12	$1	75%	35%	$0.08	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	24	12	$75	75%	55%	$0.41	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	13	12	$37	75%	55%	$0.38	0.02	0.02
Wyoming	Small Retail	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	221	25	$640	2.5%	100%	$0.29	0.00	0.00
Wyoming	Small Retail	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	17	9	$0.09	95%	25%	$0.00	0.02	0.02
Wyoming	Small Retail	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	27	10	$190	75%	95%	$1.00	0.09	0.09
Wyoming	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	Existing	220	4	$25	100%	N/A	$0.03	18	18
Wyoming	Warehouse	Computers	Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Per Building	New	220	4	$25	100%	N/A	$0.03	1	1
Wyoming	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	Existing	51	5	$1,703	95%	81%	$7.92	0.64	0.64
Wyoming	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	Existing	310	10	$5,898	25%	70%	$2.78	0.87	0.87
Wyoming	Warehouse	Cooling Chillers	Chiller-Water Side Economizer	Install Economizer	No Economizer	Per Building	Existing	205	15	$13,694	45%	90%	$7.83	1	1
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	860	20	$4,392	100%	N/A	$0.52	4	6
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	286	20	$1,464	100%	N/A	$0.52	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	Existing	640	20	$3,266	100%	N/A	$0.52	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	410	15	$3,500	80%	98%	$1.00	5	5
Wyoming	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	Existing	328	7	$729	10%	94%	$0.42	0.44	0.44
Wyoming	Warehouse	Cooling Chillers	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-Two-Speed Fan Motor	Cooling Tower-One-Speed Fan Motor	Per Building	Existing	574	15	$65	65%	35%	$0.01	1	1
Wyoming	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	Existing	164	13	$527	75%	65%	$0.41	1	1
Wyoming	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	410	15	$1,750	75%	76%	$0.50	3	3
Wyoming	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	410	40	$1,300	2.0%	**%	$21.98	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	205	12	$70	10%	39%	$0.05	0.10	0.10
Wyoming	Warehouse	Cooling Chillers	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	15	25	$5,266	45%	61%	$34.31	0.05	0.05
Wyoming	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1	25	$2,533	25%	85%	$177.09	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	80%	.	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$6,764	10%	85%	.	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,760	10%	65%	.	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Pipe Insulation	1.5" of Insulation, assuming R-6 (WY State Code)	No Insulation	Per Building	Existing	61	15	$205	65%	45%	$0.39	0.22	0.22
Wyoming	Warehouse	Cooling Chillers	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	513	7	$1,971	90%	85%	$0.72	4	4
Wyoming	Warehouse	Cooling Chillers	Window Film	Window Film	No Film	Per Building	Existing	166	10	$621	35%	68%	$0.54	0.45	0.45
Wyoming	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	579	25	$14	15%	90%	$0.00	0.88	0.88
Wyoming	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	635	25	$90	15%	70%	$0.01	0.74	0.74
Wyoming	Warehouse	Cooling Chillers	Chilled Water / Condenser Water Settings-Optimization	Additional Control Features	EMS already installed - No Optimization	Per Building	New	28	5	$1,703	95%	81%	$14.21	0.03	0.03
Wyoming	Warehouse	Cooling Chillers	Chilled Water Piping Loop w/ VSD Control	VSD for secondary chilled water loop	Primary loop only w/ constant speed pump	Per Building	New	172	10	$5,308	25%	70%	$4.48	0.04	0.04
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Advanced Efficiency	0.58 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	579	20	$3,953	100%	N/A	$0.70	0.57	0.58
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - High Efficiency	0.71 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	193	20	$1,317	100%	N/A	$0.70	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Chillers <150 tons (screw) - Premium Efficiency	0.63 kW/ton (full load)	0.775 kW/ton (full load)	Per Building	New	430	20	$2,939	100%	N/A	$0.70	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	228	15	$3,500	80%	98%	$1.79	0.26	0.26

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Cooling Chillers	Cooling Tower-Decrease Approach Temperature	6 Deg F	10 Deg F	Per Building	New	182	7	$656	10%	94%	$0.67	0.02	0.02
Wyoming	Warehouse	Cooling Chillers	Cooling Tower-VSD Fan Control	Variable-Speed Tower Fans replace Two-Speed	Cooling Tower-Two-Speed Fan Motor	Per Building	New	91	13	$475	75%	65%	$0.66	0.06	0.06
Wyoming	Warehouse	Cooling Chillers	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	228	15	$1,750	75%	76%	$0.90	0.17	0.17
Wyoming	Warehouse	Cooling Chillers	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	228	40	$1,300	2.0%	**%	$39.44	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	0.79	25	$2,533	75%	85%	$317.80	0.00	0.00
Wyoming	Warehouse	Cooling Chillers	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	228	15	$10,000	10%	75%	$5.13	0.02	0.02
Wyoming	Warehouse	Cooling Chillers	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	323	25	$14	80%	90%	$0.00	0.20	0.20
Wyoming	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	138	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	353	15	$680	100%	N/A	$0.23	0.00	0.00
Wyoming	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	Existing	2,927	15	$-14254.079	26%	N/A	$-0.57	6	8
Wyoming	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency - 11.5 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	93	15	$0.00	100%	N/A	$0.00	0.00	0.00
Wyoming	Warehouse	Cooling DX Evap	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency - 12.0 EER	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	239	15	$544	100%	N/A	$0.27	0.00	0.00
Wyoming	Warehouse	Cooling DX Evap	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	DX Package 65 to 135 kBTU/hr - Standard Efficiency - 11.2 EER	Per Building	New	1,986	15	$-10391.851	26%	N/A	$-0.61	0.67	0.71
Wyoming	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	506	15	$3,500	80%	98%	$0.81	44	44
Wyoming	Warehouse	Cooling Dx Evap	DX Package-Air Side Economizer	Air-Side Economizer	No Economizer	Per Building	Existing	759	10	$4,252	10%	40%	$0.82	3	3
Wyoming	Warehouse	Cooling Dx Evap	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	No DX Tune-Up / Diagnostics	Per Building	Existing	506	5	$1,200	95%	72%	$0.56	35	35
Wyoming	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	Existing	1,266	15	$20,833	50%	94%	$1.93	56	56
Wyoming	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	506	15	$1,750	75%	76%	$0.41	24	24
Wyoming	Warehouse	Cooling Dx Evap	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	126	18	$2,400	45%	65%	$2.03	2	2
Wyoming	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	506	40	$1,300	2.0%	**%	$17.81	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	253	12	$70	10%	39%	$0.04	0.77	0.77
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	18	25	$5,266	45%	61%	$27.80	0.40	0.40
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1	25	$2,533	25%	85%	$143.49	0.02	0.02
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	151	20	$1,739	45%	58%	$1.17	3	3

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Wyoming	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	91	20	$305	45%	85%	$0.34	2	2
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	0.00	25	$9,400	15%	80%	.	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	0.00	25	$2,900	15%	90%	.	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$6,764	10%	85%	.	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,760	10%	65%	.	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	633	7	$1,971	90%	85%	$0.58	37	37
Wyoming	Warehouse	Cooling Dx Evap	Window Film	Window Film	No Film	Per Building	Existing	166	10	$621	35%	68%	$0.54	2	2
Wyoming	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	715	25	$14	15%	90%	$0.00	6	6
Wyoming	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	783	25	$90	15%	70%	$0.01	5	5
Wyoming	Warehouse	Cooling Dx Evap	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	317	15	$3,500	80%	98%	$1.29	2	2
Wyoming	Warehouse	Cooling Dx Evap	Direct / Indirect Evaporative Cooling, Pre-Cooling	Evaporative Cooler	Standard DX cooling	Per Building	New	793	15	$20,833	50%	94%	$3.08	3	3
Wyoming	Warehouse	Cooling Dx Evap	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	317	15	$1,750	75%	76%	$0.65	1	1
Wyoming	Warehouse	Cooling Dx Evap	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	317	40	$1,300	2.0%	**%	$28.43	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1	25	$2,533	75%	85%	$229.06	0.00	0.00
Wyoming	Warehouse	Cooling Dx Evap	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	57	20	$305	45%	85%	$0.55	0.11	0.11
Wyoming	Warehouse	Cooling Dx Evap	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	317	15	$10,000	10%	75%	$3.70	0.19	0.19
Wyoming	Warehouse	Cooling Dx Evap	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	448	25	$14	80%	90%	$0.00	1	1
Wyoming	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	Existing	33	6	$0.73	100%	N/A	$0.00	14	14
Wyoming	Warehouse	Fax	Fax - ENERGY STAR	ENERGY STAR Fax	Standard Fax	Per Building	New	33	6	$0.73	100%	N/A	$0.00	1	1
Wyoming	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	Existing	29	4	$33	100%	N/A	$0.32	0.74	0.74
Wyoming	Warehouse	Flat Screen Monitors	Monitor - ENERGY STAR	ENERGY STAR Features Enabled	Non-ENERGY STAR Features	Per Building	New	29	4	$33	100%	N/A	$0.32	0.54	0.54
Wyoming	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	Existing	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Wyoming	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	Existing	4	20	$0.11	100%	N/A	$0.00	0.00	0.01
Wyoming	Warehouse	Freezers	Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Per Building	Existing	30	20	$4	8.8%	100%	$0.01	1	1
Wyoming	Warehouse	Freezers	Freezer (Residential) - ENERGY STAR	ENERGY STAR Freezer	Federal Standard 2001 Freezer	Per Building	New	1	20	$0.23	100%	N/A	$0.01	0.00	0.00
Wyoming	Warehouse	Freezers	Freezer (Residential) - Federal Standard 2015	Federal Standard 2015 Freezer	Federal Standard 2001 Freezer	Per Building	New	4	20	$0.11	100%	N/A	$0.00	0.00	0.00
Wyoming	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	Existing	1,075	15	$2,533	100%	N/A	$0.28	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	Existing	4,193	15	$5,067	100%	N/A	$0.14	39	48
Wyoming	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	Existing	541	15	$3,500	80%	98%	$0.76	8	8
Wyoming	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	3,687	15	$1,750	75%	76%	$0.06	39	39
Wyoming	Warehouse	Heat Pump	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	921	18	$2,400	45%	65%	$0.28	4	4
Wyoming	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	4,718	14	$9,070	5.0%	94%	$0.23	3	3
Wyoming	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	Existing	541	40	$1,300	2.0%	**%	$16.66	0.00	0.00
Wyoming	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	Existing	6,747	30	$50,218	5.0%	N/A	$2.11	1	2
Wyoming	Warehouse	Heat Pump	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	2,765	12	$70	10%	39%	$0.00	1	1
Wyoming	Warehouse	Heat Pump	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	5,920	25	$5,266	45%	61%	$0.09	28	28
Wyoming	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	781	25	$2,533	25%	85%	$0.32	2	2
Wyoming	Warehouse	Heat Pump	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	1,106	20	$1,739	45%	58%	$0.16	4	4
Wyoming	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	663	20	$305	45%	85%	$0.05	4	4
Wyoming	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	12,569	25	$9,400	15%	80%	$0.07	24	24
Wyoming	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	1,748	25	$2,900	15%	90%	$0.17	3	3
Wyoming	Warehouse	Heat Pump	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$6,764	10%	85%	.	0.00	0.00
Wyoming	Warehouse	Heat Pump	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,760	10%	65%	.	0.00	0.00
Wyoming	Warehouse	Heat Pump	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	4,608	7	$1,971	90%	85%	$0.08	54	54
Wyoming	Warehouse	Heat Pump	Window Film	Window Film	No Film	Per Building	Existing	166	10	$621	35%	68%	$0.54	0.55	0.55
Wyoming	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	5,207	25	$14	15%	90%	$0.00	9	9
Wyoming	Warehouse	Heat Pump	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	5,705	25	$90	15%	70%	$0.00	8	8
Wyoming	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	11.5 EER, 3.4 COP	11.0 EER, 3.3 COP	Per Building	New	866	15	$2,027	100%	N/A	$0.27	0.00	0.00
Wyoming	Warehouse	Heat Pump	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency	12.0 EER, 3.8 COP	11.0 EER, 3.3 COP	Per Building	New	3,458	15	$4,054	100%	N/A	$0.14	5	5
Wyoming	Warehouse	Heat Pump	Cool Roofs	ENERGY STAR Cool Roof - Reflect Material (Reflectivity = 0.55)	Standard Roof	Per Building	New	405	15	$3,500	80%	98%	$1.01	0.57	0.57
Wyoming	Warehouse	Heat Pump	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	2,758	15	$1,750	75%	76%	$0.07	2	2
Wyoming	Warehouse	Heat Pump	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	3,529	14	$9,070	5.0%	94%	$0.31	0.28	0.28
Wyoming	Warehouse	Heat Pump	Green Roof	Vegetation on Roof	Standard Dark Colored Roof	Per Building	New	405	40	$1,300	2.0%	**%	$22.26	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Heat Pump	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	16.2 EER 4.0 COP	11.0 EER, 3.3 COP	Per Building	New	5,388	30	$77,164	5.0%	N/A	$1.35	0.31	0.31
Wyoming	Warehouse	Heat Pump	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	584	25	$2,533	75%	85%	$0.43	0.38	0.38
Wyoming	Warehouse	Heat Pump	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	496	20	$305	45%	85%	$0.06	0.19	0.19
Wyoming	Warehouse	Heat Pump	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	1,308	25	$2,900	35%	90%	$0.22	0.41	0.41
Wyoming	Warehouse	Heat Pump	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	2,758	15	$10,000	10%	75%	$0.43	0.33	0.33
Wyoming	Warehouse	Heat Pump	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	3,895	25	$14	80%	90%	$0.00	3	3
Wyoming	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	Existing	936	8	$260	5.0%	95%	$0.05	23	23
Wyoming	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	Existing	606	8	$680	75%	70%	$0.19	164	164
Wyoming	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	Existing	504	15	$681	62%	90%	$0.16	146	146
Wyoming	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	303	8	$1,829	90%	50%	$1.02	54	54
Wyoming	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	Existing	38	13	$58	75%	95%	$0.19	14	14
Wyoming	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	Existing	9,110	17	$6,190	5.0%	95%	$0.07	225	225
Wyoming	Warehouse	Lighting Exterior	Covered Parking Lighting	Covered Parking Lighting	Normal Lighting	Per Building	New	936	8	$260	5.0%	95%	$0.05	2	2
Wyoming	Warehouse	Lighting Exterior	Daylighting Controls, Outdoors (Photocell)	Photocell	No Controls	Per Building	New	606	8	$680	75%	70%	$0.19	16	16
Wyoming	Warehouse	Lighting Exterior	Exterior Building Lighting	30% savings	Normal Lighting	Per Building	New	504	15	$681	62%	90%	$0.16	13	13
Wyoming	Warehouse	Lighting Exterior	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	303	8	$1,829	90%	50%	$1.02	5	5
Wyoming	Warehouse	Lighting Exterior	Solid State LED White Lighting	Landscape, merchandise, signage, structure & task lighting (2.5 W)	50W 10hrs/day, 365 day/yr	Per Building	New	38	13	$58	75%	95%	$0.19	1	1
Wyoming	Warehouse	Lighting Exterior	Surface Parking Lighting	Surface Parking Lighting	Normal Lighting	Per Building	New	9,110	17	$6,190	5.0%	95%	$0.07	18	18
Wyoming	Warehouse	Lighting Interior Fluorescent	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	Existing	298	10	$832	0.5%	95%	$0.41	0.60	0.60
Wyoming	Warehouse	Lighting Interior Fluorescent	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,673	8	$8,000	10%	98%	$0.81	69	69
Wyoming	Warehouse	Lighting Interior Fluorescent	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	Existing	1,255	8	$6,000	10%	98%	$0.81	51	51
Wyoming	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	1,302	13	$1,121	100%	N/A	$0.11	329	341
Wyoming	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent Reduced Wattage - Above Standard	Above Standard Fluorescent Reduced Wattage Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	946	13	$219	100%	N/A	$0.03	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Lighting Interior Fluorescent	Lighting Interior - Fluorescent T5 - Above Standard	Above Standard Fluorescent T5 Interior Lighting	Standard Interior Building Fluorescent Lighting	Per Building	Existing	2,002	13	$14,883	25%	N/A	$0.94	162	167
Wyoming	Warehouse	Lighting Interior Fluorescent	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,621	8	$1,829	75%	50%	$0.19	253	253
Wyoming	Warehouse	Lighting Interior HID	Lighting Interior - Efficient Metal Halide - Above Standard	Above Standard Efficient Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,096	15	$1,380	100%	N/A	$0.08	0.00	0.00
Wyoming	Warehouse	Lighting Interior HID	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,605	15	$5,027	95%	N/A	$0.23	434	444
Wyoming	Warehouse	Lighting Interior HID	Lighting Interior - High Bay LED - Above Standard	Above Standard High Bay LED Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	2,326	22	$34,967	50%	N/A	$1.57	12	12
Wyoming	Warehouse	Lighting Interior HID	Lighting Interior - Induction - Above Standard	Above Standard Induction Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	1,463	15	$251	25%	N/A	$0.02	0.00	0.00
Wyoming	Warehouse	Lighting Interior HID	Lighting Interior - Metal Halide - Above Standard	Above Standard Metal Halide Interior Lighting	Standard High Pressure Sodium Interior Lighting	Per Building	Existing	702	15	$22,248	100%	N/A	$3.72	0.00	0.00
Wyoming	Warehouse	Lighting Interior Hid	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	1,238	8	$1,829	75%	50%	$0.25	220	220
Wyoming	Warehouse	Lighting Interior Other	Exit Sign - LED	LED Exit Sign	CFL Exit Sign	Per Building	Existing	49	11	$19	95%	50%	$0.05	12	12
Wyoming	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	Existing	9	13	$8	95%	98%	$0.11	4	4
Wyoming	Warehouse	Lighting Interior Other	Bi-Level Control, Stairwell Lighting	Occupancy Sensor Control, 50% Lighting Power during unoccupied Time	Continuous Full Power Lighting in Stairways	Per Building	New	549	10	$832	0.5%	95%	$0.22	0.11	0.11
Wyoming	Warehouse	Lighting Interior Other	Dimming-Continuous, Fluorescent Fixtures	Continuous Dimming, Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,392	8	$8,000	10%	98%	$0.98	6	6
Wyoming	Warehouse	Lighting Interior Other	Dimming-Stepped, Fluorescent Fixtures	3-stepped Dimming of Fluorescent Fixtures (Day-Lighting)	No Dimming Controls	Per Building	New	1,044	8	$6,000	10%	98%	$0.98	0.00	0.00
Wyoming	Warehouse	Lighting Interior Other	Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Per Building	New	9	13	$8	95%	98%	$0.11	0.40	0.40
Wyoming	Warehouse	Lighting Interior Other	Lighting Package, High Efficiency	12% Reduction	Standard Lighting Power Density (LPD)	Per Building	New	3,297	13	$9,381	100%	N/A	$0.36	158	159
Wyoming	Warehouse	Lighting Interior Other	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	New	2,981	8	$1,829	75%	50%	$0.10	52	52
Wyoming	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,370	4	$95	85%	N/A	$0.00	0.00	533
Wyoming	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - Backstop EISA Standard	Standard Screw Base Interior Backstop EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	6,451	1	$63	100%	N/A	$0.00	0.00	0.00
Wyoming	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base Incandescent - EISA Standard	Standard Screw Base Interior EISA Incandescent Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	1,820	1	$48	100%	N/A	$0.00	0.00	0.00

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Wyoming	Warehouse	Lighting Interior Screw Base	Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Per Building	Existing	7,430	12	$1,188	15%	N/A	$0.02	17	300
Wyoming	Warehouse	Lighting Interior Screw Base	Occupancy Sensor Control	Occupancy Sensor Control	No Occupancy Sensor	Per Building	Existing	675	8	$1,829	75%	50%	$0.46	37	37
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	Existing	3	7	$0.82	10%	90%	$0.05	0.14	0.14
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	Existing	52	4	$0.00	10%	45%	$0.00	1	1
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	Existing	153	10	$0.75	95%	75%	$0.00	56	56
Wyoming	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	Existing	10	4	$1	5.0%	86%	$0.04	0.23	0.23
Wyoming	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	Existing	66	4	$13	60%	90%	$0.06	18	18
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Battery Charging System	ENERGY STAR Battery Charging System	Non-ENERGY STAR Battery Chargers	Per Building	New	3	7	$0.82	10%	90%	$0.05	0.01	0.01
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Scanners	ENERGY STAR Scanners	Standard Scanner	Per Building	New	52	4	$0.00	10%	45%	$0.00	0.13	0.13
Wyoming	Warehouse	Other Plug Load	ENERGY STAR - Water Cooler	ENERGY STAR Water Cooler (Hot/Cold Water)	Non-ENERGY STAR Water Cooler	Per Building	New	153	10	$0.75	95%	75%	$0.00	5	5
Wyoming	Warehouse	Other Plug Load	Power Supply Transformer/Converter	80 Plus	85% efficient power supply (> 51W)	Per Building	New	10	4	$1	5.0%	86%	$0.04	0.02	0.02
Wyoming	Warehouse	Other Plug Load	Smart Strips	Smart Strip Power Strip	Standard surge protector	Per Building	New	66	4	$13	60%	90%	$0.06	2	2
Wyoming	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	Existing	105	6	$115	100%	N/A	$0.23	1	1
Wyoming	Warehouse	Photo Copiers	Copiers - ENERGY STAR	ENERGY STAR Copiers	Standard Copier	Per Building	New	105	6	$115	100%	N/A	$0.23	0.25	0.25
Wyoming	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	Existing	38	6	$4	100%	N/A	$0.02	1	1
Wyoming	Warehouse	Printers	Printers - ENERGY STAR	ENERGY STAR Printers	Standard Printers	Per Building	New	38	6	$4	100%	N/A	$0.02	0.00	0.00
Wyoming	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	53	20	$146	100%	N/A	$0.28	0.00	0.00
Wyoming	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	60	20	$196	100%	N/A	$0.33	5	7
Wyoming	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	47	20	$11	100%	N/A	$0.02	0.00	0.00
Wyoming	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	Existing	15	20	$5	100%	N/A	$0.04	0.00	0.00
Wyoming	Warehouse	Refrigerators	Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Per Building	Existing	358	20	$40	8.8%	100%	$0.01	12	12
Wyoming	Warehouse	Refrigerators	Refrigerator - CEE Tier 2	CEE Tier 2 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	53	20	$146	100%	N/A	$0.28	0.00	0.00
Wyoming	Warehouse	Refrigerators	Refrigerator - CEE Tier 3	CEE Tier 3 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	60	20	$196	100%	N/A	$0.33	1	1
Wyoming	Warehouse	Refrigerators	Refrigerator - ENERGY STAR	ENERGY STAR Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	47	20	$11	100%	N/A	$0.02	0.00	0.00
Wyoming	Warehouse	Refrigerators	Refrigerator - Federal Standard 2015	Federal Standard 2015 Refrigerator	Federal Standard 2001 Refrigerator	Per Building	New	15	20	$5	100%	N/A	$0.04	0.00	0.00
Wyoming	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	Existing	7,660	15	$1,750	75%	76%	$0.03	214	214
Wyoming	Warehouse	Space Heat	Duct Repair and Sealing	Reduction In Duct Losses to 5 %	No Repair or Sealing 15% duct losses	Per Building	Existing	1,915	18	$2,400	45%	65%	$0.13	26	26

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	Existing	11,490	14	$9,070	5.0%	94%	$0.10	24	24
Wyoming	Warehouse	Space Heat	Infiltration Reduction	Install Caulking And Weatherstripping (ACH 0.65)	Infiltration Conditions (ACH 1.0)	Per Building	Existing	7,660	12	$70	10%	39%	$0.00	13	13
Wyoming	Warehouse	Space Heat	Insulation - Ceiling	R-20ci (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	14,543	25	$5,266	45%	61%	$0.04	181	181
Wyoming	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	Existing	1,909	25	$2,533	25%	85%	$0.13	17	17
Wyoming	Warehouse	Space Heat	Insulation - Duct	R-5 (WY State Code)	No Insulation	Per Building	Existing	2,298	20	$1,739	45%	58%	$0.08	25	25
Wyoming	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	Existing	1,378	20	$305	45%	85%	$0.02	22	22
Wyoming	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-30 (WY State Code)	Average R-Value Existing Conditions	Per Building	Existing	26,766	25	$9,400	15%	80%	$0.04	137	137
Wyoming	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	Existing	3,428	25	$2,900	15%	90%	$0.08	18	18
Wyoming	Warehouse	Space Heat	Insulation - Wall	R-13 + 10ci	R-13 + 3ci (WY State Code)	Per Building	Existing	0.00	25	$6,764	10%	85%	.	0.00	0.00
Wyoming	Warehouse	Space Heat	Insulation - Wall	R-13 + 3ci (WY State Code)	Average Existing Conditions	Per Building	Existing	0.00	25	$18,760	10%	65%	.	0.00	0.00
Wyoming	Warehouse	Space Heat	Re-Commissioning	Re-Commissioning	Average Existing Conditions	Per Building	Existing	9,575	7	$1,971	90%	85%	$0.04	297	297
Wyoming	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	Existing	10,818	25	$14	15%	90%	$0.00	53	53
Wyoming	Warehouse	Space Heat	Windows-High Efficiency	U-0.50 (WY State Code)	Average U-Value Existing Conditions	Per Building	Existing	11,852	25	$90	15%	70%	$0.00	44	44
Wyoming	Warehouse	Space Heat	Direct Digital Control System-Optimization	Premium Efficiency EMS System	High Efficiency EMS System	Per Building	New	5,710	15	$1,750	75%	76%	$0.04	15	15
Wyoming	Warehouse	Space Heat	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	No Heat Recovery	Per Building	New	8,565	14	$9,070	5.0%	94%	$0.13	1	1
Wyoming	Warehouse	Space Heat	Insulation - Ceiling	R-30	R-20ci (WY State Code)	Per Building	New	1,423	25	$2,533	75%	85%	$0.18	2	2
Wyoming	Warehouse	Space Heat	Insulation - Duct	R-8	R-5 (WY State Code)	Per Building	New	1,027	20	$305	45%	85%	$0.03	1	1
Wyoming	Warehouse	Space Heat	Insulation - Floor (non-slab)	R-38	R-30 (WY State Code)	Per Building	New	2,555	25	$2,900	35%	90%	$0.11	2	2
Wyoming	Warehouse	Space Heat	Natural Ventilation	Natural Ventilation Design Reduction in Cooling	None - Standard Ventilation	Per Building	New	5,710	15	$10,000	10%	75%	$0.21	1	1
Wyoming	Warehouse	Space Heat	Windows-High Efficiency	U-0.32	U-0.50 (WY State Code)	Per Building	New	8,064	25	$14	80%	90%	$0.00	16	16
Wyoming	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	Existing	255	10	$35	100%	N/A	$0.02	55	55
Wyoming	Warehouse	Vending Machines	Vending Machines-High Efficiency	ENERGY STAR (Tier 2) Vending Machines-High Efficiency 500 can capacity Under 5.92 kWh/day	Standard Vending Machines- 13 kWh/day	Per Building	New	255	10	$35	100%	N/A	$0.02	6	6
Wyoming	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	Existing	149	15	$66	95%	76%	$0.05	17	17
Wyoming	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	Existing	3,748	20	$1,113	55%	45%	$0.03	482	482
Wyoming	Warehouse	Ventilation And Circulation	Motor Rewind	>15, <500 HP	No Rewind	Per Building	Existing	176	7	$50	65%	25%	$0.05	13	13
Wyoming	Warehouse	Ventilation And Circulation	Motor - CEE Premium-Efficiency Plus	CEE PE+ Motor for HVAC Applications	NEMA Efficiency Motors	Per Building	New	104	15	$66	95%	76%	$0.07	3	3

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Ventilation And Circulation	Motor - Pump & Fan System - Variable Speed Control	Pump And Fan System Optimization w/ VSD	No Pump And Fan System VSD Optimization	Per Building	New	2,601	20	$1,113	55%	45%	$0.04	19	19
Wyoming	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,086	15	$241	75%	N/A	$0.01	0.01	3
Wyoming	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	Existing	2,064	15	$144	75%	N/A	$0.01	0.00	0.00
Wyoming	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater GT 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,027	15	$241	75%	N/A	$0.01	0.00	0.53
Wyoming	Warehouse	Water Heat GT 55 Gal	Heat Pump Water Heater - Federal Standard 2015	Federal Standard 2015 Heat Pump Water Heater GT 55 GAL - EF 1.97	Federal Standard 2004 Storage Water Heater GT 55 GAL - EF 0.87	Per Building	New	2,005	15	$144	75%	N/A	$0.01	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	175	10	$2,778	55%	94%	$2.32	1	1
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.37	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.41	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.38	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	700	25	$800	2.5%	100%	$0.11	0.19	0.19
Wyoming	Warehouse	Water Heat Gt 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	35	12	$25	80%	90%	$0.10	0.27	0.27
Wyoming	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	55	9	$5	95%	25%	$0.02	0.14	0.14
Wyoming	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	1	1
Wyoming	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	1	1
Wyoming	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	87	10	$78	75%	95%	$0.13	0.70	0.70
Wyoming	Warehouse	Water Heat Gt 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	168	10	$2,778	55%	94%	$2.41	0.07	0.07
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.37	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.41	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.38	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	674	25	$640	2.5%	100%	$0.09	0.00	0.00
Wyoming	Warehouse	Water Heat Gt 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	53	9	$0.04	95%	25%	$0.00	0.01	0.01
Wyoming	Warehouse	Water Heat Gt 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	0.13	0.13
Wyoming	Warehouse	Water Heat Gt 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	84	10	$78	75%	95%	$0.14	0.05	0.05
Wyoming	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	1,900	15	$1,241	75%	N/A	$0.08	161	174
Wyoming	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	Existing	114	15	$54	100%	N/A	$0.06	0.00	0.00
Wyoming	Warehouse	Water Heat LE 55 Gal	Heat Pump Water Heater - ENERGY STAR	ENERGY STAR Heat Pump Water Heater LE 55 GAL - EF 2.0	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	1,846	15	$1,241	75%	N/A	$0.08	23	24
Wyoming	Warehouse	Water Heat LE 55 Gal	Water Heater - Federal Standard 2015 Storage	Federal Standard 2015 Storage Water Heater LE 55 GAL - EF 0.95	Federal Standard 2004 Storage Water Heater LE 55 GAL - EF 0.92	Per Building	New	110	15	$54	100%	N/A	$0.06	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	Existing	179	10	$2,778	25%	94%	$2.27	6	6
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	1	12	$4	75%	35%	$0.37	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	0.31	12	$0.19	75%	35%	$0.08	0.01	0.01
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	Existing	2	12	$8	75%	55%	$0.41	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	Existing	1	12	$4	75%	55%	$0.38	0.07	0.08
Wyoming	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	Existing	716	25	$800	2.5%	100%	$0.11	2	2
Wyoming	Warehouse	Water Heat Le 55 Gal	Hot Water (SHW) Pipe Insulation	1.0" of Insulation, assuming R-4 (WY State Code)	No Insulation	Per Building	Existing	35	12	$25	80%	90%	$0.09	3	3
Wyoming	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	Existing	56	9	$5	95%	25%	$0.02	2	2
Wyoming	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	Existing	223	10	$23	95%	73%	$0.02	23	23
Wyoming	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	2.5 GPM (Federal Code)	3.0 GPM	Per Building	Existing	180	10	$58	95%	62%	$0.05	15	15
Wyoming	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	Existing	89	10	$78	75%	95%	$0.13	9	9

Table C-2.2. Commercial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Warehouse	Water Heat Le 55 Gal	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems (VFD control by demand)	Constant Circulation	Per Building	New	169	10	$2,778	25%	94%	$2.40	0.48	0.48
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	1	12	$4	75%	35%	$0.37	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	ENERGY STAR Dishwasher - 295 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	0.31	12	$0.19	75%	35%	$0.08	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2010 Dishwasher - 355 kWh/yr and 6.5 gal/cycle	Per Building	New	2	12	$8	75%	55%	$0.41	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Dishwasher Residential	Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	Federal Standard 2014 Dishwasher - 307 kWh/yr and 5.0 gal/cycle	Per Building	New	1	12	$4	75%	55%	$0.38	0.00	0.00
Wyoming	Warehouse	Water Heat Le 55 Gal	Drainwater Heat Recovery Water Heater	Install (Power-Pipe or GFX) - Heat Recovery Water Heater	No Heat Recovery System	Per Building	New	676	25	$640	2.5%	100%	$0.09	0.06	0.06
Wyoming	Warehouse	Water Heat Le 55 Gal	Low-Flow Faucet Aerators	1.5 GPM	2.2 GPM	Per Building	New	53	9	$0.04	95%	25%	$0.00	0.16	0.16
Wyoming	Warehouse	Water Heat Le 55 Gal	Low-Flow Showerheads	1.5 GPM	2.5 GPM (Federal Code)	Per Building	New	223	10	$23	95%	73%	$0.02	1	1
Wyoming	Warehouse	Water Heat Le 55 Gal	Ultrasonic Faucet Control	Install Ultrasonic Motion Faucet Control	No Faucet Control	Per Building	New	84	10	$78	75%	95%	$0.14	0.74	0.74

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Agriculture	Fans	Circulating Fans			Per Industry	Existing	84,226	10	$18,686	32%	100%	$0.20	25	25
California	Agriculture	Fans	High-efficiency Ventilation Systems			Per Industry	Existing	95,370	10	$83,043	32%	100%	$0.28	29	29
California	Agriculture	Fans	Programmable Ventilation Controllers			Per Industry	Existing	1,684	10	$189	32%	100%	$0.02	0.51	0.51
California	Agriculture	Motors Other	VFDs - Potato / Onion Shed			Per Industry	Existing	281	10	$77,196	0.1%	100%	$0.04	0.60	0.60
California	Agriculture	Other	Agricultural Engine Block Heater Timers			Per Industry	Existing	30,883	10	$1,896	18%	100%	$0.01	5	5
California	Agriculture	Process Cool	Milk Precoolers			Per Industry	Existing	18,198	15	$9,543	0.4%	100%	$0.06	0.07	0.07
California	Agriculture	Process Heat	Heat Lamp Setback (Microzone)			Per Industry	Existing	7,580	15	$1,288	1.4%	100%	$0.02	0.10	0.10
California	Agriculture	Process Heat	Heat Lamp/Heating Pad Controller			Per Industry	Existing	29,479	15	$3,081	1.4%	100%	$0.01	0.39	0.39
California	Agriculture	Process Heat	Heat Lamps			Per Industry	Existing	56,852	10	$1,073	1.4%	100%	$0.00	0.76	0.76
California	Agriculture	Process Heat	Heat Reclaimers			Per Industry	Existing	76,874	15	$22,040	0.4%	100%	$0.08	0.71	0.71
California	Agriculture	Process Heat	High-efficiency Livestock Waterers			Per Industry	Existing	89,509	10	$70,537	32%	100%	$0.05	58	58
California	Agriculture	Pumps	Automatic Milker Takeoffs			Per Industry	Existing	33,690	15	$20,717	0.4%	100%	$0.07	0.13	0.13
California	Agriculture	Pumps	VFDs for Dairy Vacuum Pumps			Per Industry	Existing	56,956	15	$89,167	0.4%	100%	$0.02	2	2
California	Chemical Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	27%	100%	.	0.00	0.00
California	Chemical Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	73%	100%	.	0.00	0.00
California	Chemical Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Chemical Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
California	Chemical Mfg	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Chemical Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Chemical Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	73%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	74%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	89%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.6%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	3.9%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	3.9%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.0%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	10%	100%	.	0.00	0.00
California	Chemical Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Chemical Mfg	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
California	Chemical Mfg	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Chemical Mfg	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Chemical Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	16%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	81%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	59%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	0.00	10	$0.00	38%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	0.00	10	$0.00	38%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
California	Chemical Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	0.00	1	$0.00	10%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	0.00	20	$0.00	30%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	0.00	20	$0.00	8.0%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Chemical Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Chemical Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Chemical Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	0.00	2	$0.00	63%	100%	.	0.00	0.00
California	Chemical Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Chemical Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Chemical Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
California	Chemical Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	59%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	76%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	5.4%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	0.00	12	$0.00	34%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	Pump System Optimization			Per Industry	Existing	0.00	12	$0.00	16%	100%	.	0.00	0.00
California	Chemical Mfg	Pumps	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	27%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	74%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Electronic Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	39%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	86%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Electronic Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	10%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Electronic Equipment Mfg	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	26%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	72%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	74%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	3.2%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	0.00	10	$0.00	35%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	0.00	10	$0.00	35%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	0.00	1	$0.00	10%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	0.00	20	$0.00	30%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Elec Chip Fab: Solidstate Chiller			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	0.00	20	$0.00	8.0%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	0.00	10	$0.00	36%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	0.00	2	$0.00	69%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust			Per Industry	Existing	0.00	10	$0.00	80%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector			Per Industry	Existing	0.00	10	$0.00	35%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure			Per Industry	Existing	0.00	10	$0.00	50%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	73%	100%	.	0.00	0.00
California	Electronic Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	5.2%	100%	.	0.00	0.00
California	Food Mfg	Fans	Facility Energy Management			Per Industry	Existing	1,890	2	$39	3.7%	100%	$0.01	0.06	0.06
California	Food Mfg	Fans	Fan System Optimization			Per Industry	Existing	7,894	10	$1,611	30%	100%	$0.03	2	2
California	Food Mfg	Fans	High Efficiency Motors			Per Industry	Existing	1,523	15	$663	75%	100%	$0.05	1	1
California	Food Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	6,300	10	$569	34%	100%	$0.01	2	2
California	Food Mfg	Fans	Properly Sized Fans			Per Industry	Existing	10,700	10	$1,702	15%	100%	$0.02	1	1
California	Food Mfg	Fans	Synchronous Belts			Per Industry	Existing	1,149	10	$245	21%	100%	$0.03	0.23	0.23
California	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	6,636	15	$975	14%	100%	$0.02	0.86	0.86
California	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	21,181	15	$1,986	5.0%	100%	$0.01	1	1
California	Food Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	47,563	20	$6,388	1.0%	100%	$0.01	0.45	0.45
California	Food Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	15,854	20	$2,129	6.5%	100%	$0.01	0.99	0.99
California	Food Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	35,368	20	$4,750	2.5%	100%	$0.01	0.85	0.85
California	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	4,931	15	$713	45%	100%	$0.02	2	2
California	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	12,602	15	$1,434	20%	100%	$0.01	2	2
California	Food Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	4,347	15	$104	2.5%	100%	$0.00	2	2

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Food Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	44,253	30	$4,151	4.0%	100%	$0.01	1	1
California	Food Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	39,484	10	$1,987	33%	100%	$0.01	12	12
California	Food Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	9,451	10	$259	73%	100%	$0.00	6	6
California	Food Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	30,166	15	$60,184	0.0%	100%	$0.23	0.00	0.00
California	Food Mfg	Lighting	Facility Energy Management			Per Industry	Existing	3,334	2	$69	75%	100%	$0.01	2	2
California	Food Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	10,163	20	$60,030	0.0%	100%	$3.58	0.00	0.00
California	Food Mfg	Lighting	LED (High Bay)			Per Industry	Existing	33,482	20	$42,860	2.1%	100%	$1.64	0.68	0.68
California	Food Mfg	Lighting	Lighting Controls			Per Industry	Existing	33,362	10	$4,274	28%	100%	$0.02	9	9
California	Food Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	37,639	15	$12,466	40%	100%	$0.35	14	14
California	Food Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	21,078	15	$43,954	0.0%	100%	$0.24	0.00	0.00
California	Food Mfg	Lighting	Screw Base CFL			Per Industry	Existing	45,229	4	$3,003	10%	100%	$0.01	14	14
California	Food Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	27,091	1	$2,364	0.0%	100%	$0.00	0.00	0.00
California	Food Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	35,041	1	$2,076	0.0%	100%	$0.00	0.00	0.00
California	Food Mfg	Lighting	Screw Base LED			Per Industry	Existing	46,425	12	$24,592	1.8%	100%	$0.02	2	2
California	Food Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	54,535	13	$3,873	11%	100%	$0.47	5	5
California	Food Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	44,089	13	$34,705	34%	100%	$0.10	14	14
California	Food Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	34,023	13	$32,062	0.0%	100%	$0.12	0.00	0.00
California	Food Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	45,610	13	$45,810	0.0%	100%	$0.13	0.00	0.00
California	Food Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	9,829	2	$205	75%	100%	$0.01	7	7
California	Food Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	7,922	15	$3,449	73%	100%	$0.05	5	5
California	Food Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	18,541	10	$1,920	33%	100%	$0.01	5	5
California	Food Mfg	Motors Other	Motors Other			Per Industry	Existing	4,236	15	$77	88%	100%	$0.00	3	3
California	Food Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	2,955	10	$674	6.6%	100%	$0.03	0.18	0.18
California	Food Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	5,497	11.2	$1,981	4.6%	100%	$0.05	0.24	0.24
California	Food Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	2,922	8	$423	3.9%	100%	$0.02	0.10	0.10
California	Food Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	2,976	8	$302	3.9%	100%	$0.02	0.11	0.11
California	Food Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	3,207	9	$978	6.9%	100%	$0.05	0.21	0.21
California	Food Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	40,044	12	$8,566	10%	100%	$0.03	3	3
California	Food Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	5,976	10	$1,278	20%	100%	$0.03	1	1
California	Food Mfg	Other	Bldg Improvements			Per Industry	Existing	40,149	15	$5,250	35%	100%	$0.02	13	13
California	Food Mfg	Other	Facility Energy Management			Per Industry	Existing	3,623	2	$75	75%	100%	$0.01	2	2
California	Food Mfg	Other	Transformers			Per Industry	Existing	3,148	30	$628	20%	100%	$0.02	0.60	0.60

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Food Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	21,359	10	$838	17%	100%	$0.01	3	3
California	Food Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	31,720	10	$3,426	29%	100%	$0.02	8	8
California	Food Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,940	2	$40	43%	100%	$0.01	0.79	0.79
California	Food Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	1,156	15	$397	74%	100%	$0.04	0.82	0.82
California	Food Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	19,619	10	$631	3.2%	100%	$0.00	0.59	0.59
California	Food Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,939	10	$1,196	35%	100%	$0.09	0.65	0.65
California	Food Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	1,507	10	$693	35%	100%	$0.07	0.50	0.50
California	Food Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	6,261	10	$1,960	17%	100%	$0.05	1	1
California	Food Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	1,754	10	$242	17%	100%	$0.02	0.28	0.28
California	Food Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	24,983	10	$10,376	17%	100%	$0.06	4	4
California	Food Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,939	10	$603	17%	100%	$0.04	0.31	0.31
California	Food Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	22,095	20	$32,045	8.3%	100%	$0.03	9	9
California	Food Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	12,570	2	$263	75%	100%	$0.01	9	9
California	Food Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	40,968	10	$36,052	35%	100%	$0.13	13	13
California	Food Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	24,042	10	$1,211	34%	100%	$0.01	7	7
California	Food Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	18,447	2	$568	65%	100%	$0.02	11	11
California	Food Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Food Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	46,958	10	$7,444	34%	100%	$0.02	15	15
California	Food Mfg	Process Refrig	Cold Storage Retrofit			Per Industry	Existing	66,474	10	$11,166	39%	100%	$0.02	24	24
California	Food Mfg	Process Refrig	Cold Storage Tuneup			Per Industry	Existing	62,837	3	$2,729	66%	100%	$0.02	39	39
California	Food Mfg	Process Refrig	Food: Cooling and Storage			Per Industry	Existing	60,374	10	$18,112	15%	100%	$0.04	8	8
California	Food Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	52,574	3	$3,249	3.0%	100%	$0.02	1	1
California	Food Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	4,505	10	$963	21%	100%	$0.03	0.91	0.91
California	Food Mfg	Pumps	Facility Energy Management			Per Industry	Existing	4,133	2	$86	60%	100%	$0.01	2	2
California	Food Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	3,331	15	$1,450	74%	100%	$0.05	2	2
California	Food Mfg	Pumps	Motor rewinds			Per Industry	Existing	1,335	9	$319	5.2%	100%	$0.04	0.06	0.06
California	Food Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	44,904	12	$5,613	33%	100%	$0.02	14	14
California	Food Mfg	Pumps	Pump System Optimization			Per Industry	Existing	27,161	12	$6,981	15%	100%	$0.03	3	3
California	Food Mfg	Pumps	Synchronous Belts			Per Industry	Existing	2,513	10	$537	21%	100%	$0.03	0.49	0.49
California	Industrial Machinery	Fans	Facility Energy Management			Per Industry	Existing	2,011	2	$42	6.6%	100%	$0.01	0.12	0.12
California	Industrial Machinery	Fans	Fan Equipment Upgrade			Per Industry	Existing	38,240	10	$3,277	23%	100%	$0.01	8	8

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Industrial Machinery	Fans	Fan System Optimization			Per Industry	Existing	8,400	10	$1,715	30%	100%	$0.03	2	2
California	Industrial Machinery	Fans	High Efficiency Motors			Per Industry	Existing	1,621	15	$705	76%	100%	$0.05	1	1
California	Industrial Machinery	Fans	Improved Controls - Fans			Per Industry	Existing	6,704	10	$605	34%	100%	$0.01	2	2
California	Industrial Machinery	Fans	Properly Sized Fans			Per Industry	Existing	11,386	10	$1,811	15%	100%	$0.02	1	1
California	Industrial Machinery	Fans	Synchronous Belts			Per Industry	Existing	1,222	10	$261	21%	100%	$0.03	0.25	0.25
California	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	10,639	15	$1,564	14%	100%	$0.02	1	1
California	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	33,958	15	$3,185	5.0%	100%	$0.01	1	1
California	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	76,256	20	$10,241	1.0%	100%	$0.01	0.73	0.73
California	Industrial Machinery	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	25,418	20	$3,413	6.5%	100%	$0.01	1	1
California	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	56,703	20	$7,615	2.5%	100%	$0.01	1	1
California	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	7,906	15	$1,143	45%	100%	$0.02	3	3
California	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	20,204	15	$2,299	20%	100%	$0.01	3	3
California	Industrial Machinery	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	67,295	15	$167	2.5%	100%	$0.00	4	4
California	Industrial Machinery	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	70,949	30	$6,655	4.0%	100%	$0.01	2	2
California	Industrial Machinery	Hvac	Improved Controls - HVAC			Per Industry	Existing	63,303	10	$3,186	33%	100%	$0.01	20	20
California	Industrial Machinery	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	15,153	10	$415	74%	100%	$0.00	10	10
California	Industrial Machinery	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	37,554	15	$74,923	0.0%	100%	$0.23	0.00	0.00
California	Industrial Machinery	Lighting	Facility Energy Management			Per Industry	Existing	4,151	2	$86	75%	100%	$0.01	2	2
California	Industrial Machinery	Lighting	Induction (High Bay)			Per Industry	Existing	12,652	20	$48,201	0.0%	100%	$3.58	0.00	0.00
California	Industrial Machinery	Lighting	LED (High Bay)			Per Industry	Existing	41,682	20	$75,805	2.1%	100%	$1.64	0.84	0.84
California	Industrial Machinery	Lighting	Lighting Controls			Per Industry	Existing	41,532	10	$5,321	28%	100%	$0.02	11	11
California	Industrial Machinery	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	46,857	15	$40,008	40%	100%	$0.35	18	18
California	Industrial Machinery	Lighting	Metal Halide (High Bay)			Per Industry	Existing	26,241	15	$54,718	0.0%	100%	$0.24	0.00	0.00
California	Industrial Machinery	Lighting	Screw Base CFL			Per Industry	Existing	80,795	4	$3,738	10%	100%	$0.01	18	18

Table C-2.3. Industrial Measure Details

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California	Industrial Machinery	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	58,215	1	$2,944	0.0%	100%	$0.00	0.00	0.00
California	Industrial Machinery	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	43,623	1	$2,584	0.0%	100%	$0.00	0.00	0.00
California	Industrial Machinery	Lighting	Screw Base LED			Per Industry	Existing	82,284	12	$30,615	1.8%	100%	$0.02	3	3
California	Industrial Machinery	Lighting	T5 Linear Florescent			Per Industry	Existing	67,891	13	$53,801	11%	100%	$0.47	7	7
California	Industrial Machinery	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	54,886	13	$43,205	34%	100%	$0.10	17	17
California	Industrial Machinery	Lighting	T8 Linear Florescent			Per Industry	Existing	42,355	13	$39,915	0.0%	100%	$0.12	0.00	0.00
California	Industrial Machinery	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	56,780	13	$57,029	0.0%	100%	$0.13	0.00	0.00
California	Industrial Machinery	Motors Other	Facility Energy Management			Per Industry	Existing	5,726	2	$119	75%	100%	$0.01	4	4
California	Industrial Machinery	Motors Other	High Efficiency Motors			Per Industry	Existing	4,615	15	$2,009	75%	100%	$0.05	3	3
California	Industrial Machinery	Motors Other	Improved Controls - Motors			Per Industry	Existing	10,801	10	$1,118	34%	100%	$0.01	3	3
California	Industrial Machinery	Motors Other	Motors Other			Per Industry	Existing	2,467	15	$45	90%	100%	$0.00	2	2
California	Industrial Machinery	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,721	10	$392	6.7%	100%	$0.03	0.11	0.11
California	Industrial Machinery	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	3,202	11.2	$1,154	4.7%	100%	$0.05	0.14	0.14
California	Industrial Machinery	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	1,702	8	$246	4.0%	100%	$0.02	0.06	0.06
California	Industrial Machinery	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,733	8	$176	4.0%	100%	$0.02	0.06	0.06
California	Industrial Machinery	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	1,868	9	$569	7.1%	100%	$0.05	0.12	0.12
California	Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	23,327	12	$4,990	10%	100%	$0.03	2	2
California	Industrial Machinery	Motors Other	Synchronous Belts			Per Industry	Existing	3,481	10	$744	21%	100%	$0.03	0.70	0.70
California	Industrial Machinery	Other	Bldg Improvements			Per Industry	Existing	23,644	15	$3,091	35%	100%	$0.02	7	7
California	Industrial Machinery	Other	Facility Energy Management			Per Industry	Existing	2,133	2	$44	75%	100%	$0.01	1	1
California	Industrial Machinery	Other	Transformers			Per Industry	Existing	1,854	30	$370	20%	100%	$0.02	0.35	0.35
California	Industrial Machinery	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	20,084	10	$1,035	26%	100%	$0.01	5	5
California	Industrial Machinery	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	25,531	10	$1,002	17%	100%	$0.01	4	4
California	Industrial Machinery	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	37,916	10	$4,095	30%	100%	$0.02	10	10
California	Industrial Machinery	Process Aircomp	Facility Energy Management			Per Industry	Existing	2,319	2	$48	42%	100%	$0.01	0.94	0.94
California	Industrial Machinery	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	1,382	15	$474	75%	100%	$0.04	1	1
California	Industrial Machinery	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	23,451	10	$754	3.2%	100%	$0.00	0.72	0.72
California	Industrial Machinery	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	2,318	10	$1,430	36%	100%	$0.09	0.79	0.79
California	Industrial Machinery	Process Aircomp	Outside Air Intake			Per Industry	Existing	1,801	10	$828	36%	100%	$0.07	0.61	0.61
California	Industrial Machinery	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	7,484	10	$2,343	17%	100%	$0.05	1	1

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California	Industrial Machinery	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	2,097	10	$289	17%	100%	$0.02	0.34	0.34
California	Industrial Machinery	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	29,863	10	$12,403	17%	100%	$0.06	4	4
California	Industrial Machinery	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	2,318	10	$721	17%	100%	$0.04	0.38	0.38
California	Industrial Machinery	Process Cool	Equipment: Chillers			Per Industry	Existing	9,599	20	$2,519	8.0%	100%	$0.03	0.73	0.73
California	Industrial Machinery	Process Cool	Facility Energy Management			Per Industry	Existing	988	2	$20	75%	100%	$0.01	0.71	0.71
California	Industrial Machinery	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	3,221	10	$2,834	34%	100%	$0.13	1	1
California	Industrial Machinery	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	35,109	10	$1,769	36%	100%	$0.01	12	12
California	Industrial Machinery	Process Heat	Process Heat O&M			Per Industry	Existing	26,939	2	$830	70%	100%	$0.02	18	18
California	Industrial Machinery	Process Other	Facility Energy Management			Per Industry	Existing	164	2	$3	75%	100%	$0.01	0.11	0.11
California	Industrial Machinery	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	6,233	10	$988	34%	100%	$0.02	2	2
California	Industrial Machinery	Process Refrig	Optimization of operating parameters			Per Industry	Existing	6,979	3	$431	85%	100%	$0.02	5	5
California	Industrial Machinery	Process Refrig	Synchronous Belts			Per Industry	Existing	598	10	$127	21%	100%	$0.03	0.12	0.12
California	Industrial Machinery	Pumps	Facility Energy Management			Per Industry	Existing	3,641	2	$76	75%	100%	$0.01	2	2
California	Industrial Machinery	Pumps	High Efficiency Motors			Per Industry	Existing	2,934	15	$1,277	76%	100%	$0.05	2	2
California	Industrial Machinery	Pumps	Motor rewinds			Per Industry	Existing	1,176	9	$281	5.3%	100%	$0.04	0.06	0.06
California	Industrial Machinery	Pumps	Synchronous Belts			Per Industry	Existing	2,213	10	$473	21%	100%	$0.03	0.45	0.45
California	Lumber Wood Products	Fans	Efficient Centrifugal Fan			Per Industry	Existing	40,212	10	$25,493	11%	100%	$0.03	14	14
California	Lumber Wood Products	Fans	Facility Energy Management			Per Industry	Existing	12,907	2	$270	3.0%	100%	$0.01	0.37	0.37
California	Lumber Wood Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	45,372	10	$21,031	23%	100%	$0.01	54	54
California	Lumber Wood Products	Fans	Fan System Optimization			Per Industry	Existing	53,904	10	$11,004	30%	100%	$0.03	15	15
California	Lumber Wood Products	Fans	High Efficiency Motors			Per Industry	Existing	10,402	15	$4,528	77%	100%	$0.05	7	7
California	Lumber Wood Products	Fans	Improved Controls - Fans			Per Industry	Existing	43,019	10	$3,887	34%	100%	$0.01	14	14
California	Lumber Wood Products	Fans	Properly Sized Fans			Per Industry	Existing	73,058	10	$11,622	15%	100%	$0.02	10	10
California	Lumber Wood Products	Fans	Synchronous Belts			Per Industry	Existing	7,846	10	$1,678	21%	100%	$0.03	1	1
California	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	16,862	15	$2,479	14%	100%	$0.02	2	2

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	53,819	15	$5,048	5.0%	100%	$0.01	2	2
California	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	20,856	20	$16,231	1.0%	100%	$0.01	1	1
California	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	40,285	20	$5,410	6.5%	100%	$0.01	2	2
California	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	89,867	20	$12,069	2.5%	100%	$0.01	2	2
California	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	12,530	15	$1,811	45%	100%	$0.02	5	5
California	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	32,021	15	$3,645	20%	100%	$0.01	6	6
California	Lumber Wood Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	65,140	15	$265	2.5%	100%	$0.00	6	6
California	Lumber Wood Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	12,445	30	$10,548	4.0%	100%	$0.01	4	4
California	Lumber Wood Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	327	10	$5,049	33%	100%	$0.01	31	31
California	Lumber Wood Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	24,016	10	$658	73%	100%	$0.00	16	16
California	Lumber Wood Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	84,682	15	$68,949	0.0%	100%	$0.23	0.00	0.00
California	Lumber Wood Products	Lighting	Facility Energy Management			Per Industry	Existing	9,360	2	$195	75%	100%	$0.01	6	6
California	Lumber Wood Products	Lighting	Induction (High Bay)			Per Industry	Existing	28,530	20	$10,674	0.0%	100%	$3.58	0.00	0.00
California	Lumber Wood Products	Lighting	LED (High Bay)			Per Industry	Existing	93,992	20	$23,912	2.1%	100%	$1.64	1	1
California	Lumber Wood Products	Lighting	Lighting Controls			Per Industry	Existing	93,654	10	$12,000	28%	100%	$0.02	25	25
California	Lumber Wood Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	5,660	15	$15,713	40%	100%	$0.35	40	40
California	Lumber Wood Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	59,172	15	$23,388	0.0%	100%	$0.24	0.00	0.00
California	Lumber Wood Products	Lighting	Screw Base CFL			Per Industry	Existing	7,686	4	$8,430	10%	100%	$0.01	41	41
California	Lumber Wood Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	56,768	1	$6,638	0.0%	100%	$0.00	0.00	0.00
California	Lumber Wood Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	98,369	1	$5,828	0.0%	100%	$0.00	0.00	0.00

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California	Lumber Wood Products	Lighting	Screw Base LED			Per Industry	Existing	11,044	12	$69,036	1.8%	100%	$0.02	7	7
California	Lumber Wood Products	Lighting	T5 Linear Florescent			Per Industry	Existing	53,091	13	$72,310	11%	100%	$0.47	16	16
California	Lumber Wood Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	23,767	13	$97,426	34%	100%	$0.10	40	40
California	Lumber Wood Products	Lighting	T8 Linear Florescent			Per Industry	Existing	95,509	13	$90,006	0.0%	100%	$0.12	0.00	0.00
California	Lumber Wood Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	28,038	13	$28,599	0.0%	100%	$0.13	0.00	0.00
California	Lumber Wood Products	Motors Other	Facility Energy Management			Per Industry	Existing	36,742	2	$769	75%	100%	$0.01	26	26
California	Lumber Wood Products	Motors Other	High Efficiency Motors			Per Industry	Existing	29,613	15	$12,892	75%	100%	$0.05	21	21
California	Lumber Wood Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	69,304	10	$7,178	34%	100%	$0.01	22	22
California	Lumber Wood Products	Motors Other	Material Handling			Per Industry	Existing	99,977	10	$46,718	53%	100%	$0.07	51	51
California	Lumber Wood Products	Motors Other	Material Handling VFD			Per Industry	Existing	73,746	10	$12,123	53%	100%	$0.04	191	191
California	Lumber Wood Products	Motors Other	Motors Other			Per Industry	Existing	15,834	15	$288	90%	100%	$0.00	13	13
California	Lumber Wood Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	11,046	10	$2,520	6.8%	100%	$0.03	0.72	0.72
California	Lumber Wood Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	20,548	11.2	$7,408	4.7%	100%	$0.05	0.93	0.93
California	Lumber Wood Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	10,922	8	$1,584	4.0%	100%	$0.02	0.42	0.42
California	Lumber Wood Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	11,123	8	$1,131	4.0%	100%	$0.02	0.42	0.42
California	Lumber Wood Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	11,990	9	$3,656	7.1%	100%	$0.05	0.81	0.81
California	Lumber Wood Products	Motors Other	Panel: Hydraulic Press			Per Industry	Existing	58,803	10	$12,056	28%	100%	$0.03	150	150
California	Lumber Wood Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	49,679	12	$32,021	11%	100%	$0.03	15	15
California	Lumber Wood Products	Motors Other	Synchronous Belts			Per Industry	Existing	22,338	10	$4,778	21%	100%	$0.03	4	4
California	Lumber Wood Products	Motors Other	Wood: Replace Pneumatic Conveyor			Per Industry	Existing	78,761	10	$8,392	50%	100%	$0.00	279	279
California	Lumber Wood Products	Other	Bldg Improvements			Per Industry	Existing	12,881	15	$14,760	35%	100%	$0.02	38	38

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California	Lumber Wood Products	Other	Facility Energy Management			Per Industry	Existing	10,187	2	$213	75%	100%	$0.01	7	7
California	Lumber Wood Products	Other	Transformers			Per Industry	Existing	8,853	30	$1,767	20%	100%	$0.02	1	1
California	Lumber Wood Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	28,870	10	$6,646	27%	100%	$0.01	33	33
California	Lumber Wood Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	63,825	10	$6,434	18%	100%	$0.01	27	27
California	Lumber Wood Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	43,290	10	$26,278	31%	100%	$0.02	71	71
California	Lumber Wood Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	14,885	2	$311	41%	100%	$0.01	5	5
California	Lumber Wood Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	8,872	15	$3,047	78%	100%	$0.04	6	6
California	Lumber Wood Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	50,478	10	$4,841	3.3%	100%	$0.00	4	4
California	Lumber Wood Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	14,876	10	$9,175	37%	100%	$0.09	5	5
California	Lumber Wood Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	11,561	10	$5,316	37%	100%	$0.07	4	4
California	Lumber Wood Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	48,026	10	$15,038	18%	100%	$0.05	8	8
California	Lumber Wood Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	13,460	10	$1,858	18%	100%	$0.02	2	2
California	Lumber Wood Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	91,620	10	$79,589	18%	100%	$0.06	32	32
California	Lumber Wood Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	14,876	10	$4,629	18%	100%	$0.04	2	2
California	Lumber Wood Products	Process Cool	Equipment: Chillers			Per Industry	Existing	8,028	20	$2,107	7.7%	100%	$0.03	0.59	0.59
California	Lumber Wood Products	Process Cool	Facility Energy Management			Per Industry	Existing	826	2	$17	75%	100%	$0.01	0.59	0.59
California	Lumber Wood Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	2,693	10	$2,370	32%	100%	$0.13	0.83	0.83
California	Lumber Wood Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	7,040	10	$5,394	33%	100%	$0.01	33	33
California	Lumber Wood Products	Process Heat	Process Heat O&M			Per Industry	Existing	82,131	2	$2,530	63%	100%	$0.02	50	50
California	Lumber Wood Products	Process Other	Facility Energy Management			Per Industry	Existing	225	2	$4	75%	100%	$0.01	0.16	0.16
California	Lumber Wood Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	40,000	10	$6,341	34%	100%	$0.02	13	13

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California	Lumber Wood Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	44,783	3	$2,768	85%	100%	$0.02	36	36
California	Lumber Wood Products	Process Refrig	Synchronous Belts			Per Industry	Existing	3,837	10	$820	21%	100%	$0.03	0.77	0.77
California	Lumber Wood Products	Pumps	Facility Energy Management			Per Industry	Existing	23,364	2	$489	75%	100%	$0.01	16	16
California	Lumber Wood Products	Pumps	High Efficiency Motors			Per Industry	Existing	18,831	15	$8,198	72%	100%	$0.05	13	13
California	Lumber Wood Products	Pumps	Motor rewinds			Per Industry	Existing	7,548	9	$1,804	5.1%	100%	$0.04	0.37	0.37
California	Lumber Wood Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	53,815	12	$31,726	32%	100%	$0.02	78	78
California	Lumber Wood Products	Pumps	Pump System Optimization			Per Industry	Existing	53,526	12	$39,462	75%	100%	$0.03	110	110
California	Lumber Wood Products	Pumps	Synchronous Belts			Per Industry	Existing	14,204	10	$3,038	20%	100%	$0.03	2	2
California	Metal Mfg	Fans	Facility Energy Management			Per Industry	Existing	1,488	2	$31	27%	100%	$0.01	0.39	0.39
California	Metal Mfg	Fans	High Efficiency Motors			Per Industry	Existing	1,200	15	$522	73%	100%	$0.05	0.84	0.84
California	Metal Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	4,962	10	$448	33%	100%	$0.01	1	1
California	Metal Mfg	Fans	Properly Sized Fans			Per Industry	Existing	8,427	10	$1,340	15%	100%	$0.02	1	1
California	Metal Mfg	Fans	Synchronous Belts			Per Industry	Existing	905	10	$193	21%	100%	$0.03	0.17	0.17
California	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	2,119	15	$311	14%	100%	$0.02	0.27	0.27
California	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	6,764	15	$634	5.0%	100%	$0.01	0.32	0.32
California	Metal Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	15,190	20	$2,040	1.0%	100%	$0.01	0.14	0.14
California	Metal Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	5,063	20	$680	6.5%	100%	$0.01	0.31	0.31
California	Metal Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	11,295	20	$1,517	2.5%	100%	$0.01	0.27	0.27
California	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,574	15	$227	45%	100%	$0.02	0.68	0.68
California	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	4,024	15	$458	20%	100%	$0.01	0.77	0.77
California	Metal Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	33,325	15	$33	2.5%	100%	$0.00	0.80	0.80
California	Metal Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	14,133	30	$1,325	4.0%	100%	$0.01	0.54	0.54

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California	Metal Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	12,610	10	$634	34%	100%	$0.01	4	4
California	Metal Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	3,018	10	$82	75%	100%	$0.00	2	2
California	Metal Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	8,055	15	$16,071	0.0%	100%	$0.23	0.00	0.00
California	Metal Mfg	Lighting	Facility Energy Management			Per Industry	Existing	890	2	$18	75%	100%	$0.01	0.64	0.64
California	Metal Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	2,713	20	$96,139	0.0%	100%	$3.58	0.00	0.00
California	Metal Mfg	Lighting	LED (High Bay)			Per Industry	Existing	8,940	20	$44,961	2.1%	100%	$1.64	0.18	0.18
California	Metal Mfg	Lighting	Lighting Controls			Per Industry	Existing	8,908	10	$1,141	28%	100%	$0.02	2	2
California	Metal Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	10,050	15	$30,031	40%	100%	$0.35	3	3
California	Metal Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	5,628	15	$11,737	0.0%	100%	$0.24	0.00	0.00
California	Metal Mfg	Lighting	Screw Base CFL			Per Industry	Existing	38,780	4	$801	10%	100%	$0.01	3	3
California	Metal Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	33,937	1	$631	0.0%	100%	$0.00	0.00	0.00
California	Metal Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	9,357	1	$554	0.0%	100%	$0.00	0.00	0.00
California	Metal Mfg	Lighting	Screw Base LED			Per Industry	Existing	39,100	12	$6,567	1.8%	100%	$0.02	0.69	0.69
California	Metal Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	14,562	13	$54,440	11%	100%	$0.47	1	1
California	Metal Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	11,773	13	$9,267	34%	100%	$0.10	3	3
California	Metal Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	9,085	13	$8,561	0.0%	100%	$0.12	0.00	0.00
California	Metal Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	12,179	13	$12,232	0.0%	100%	$0.13	0.00	0.00
California	Metal Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	5,994	2	$125	75%	100%	$0.01	4	4
California	Metal Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	4,831	15	$2,103	74%	100%	$0.05	3	3
California	Metal Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	11,307	10	$1,171	33%	100%	$0.01	3	3
California	Metal Mfg	Motors Other	Motors Other			Per Industry	Existing	2,583	15	$47	89%	100%	$0.00	2	2
California	Metal Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,802	10	$411	6.7%	100%	$0.03	0.11	0.11
California	Metal Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	3,352	11.2	$1,208	4.6%	100%	$0.05	0.14	0.14
California	Metal Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	1,782	8	$258	3.9%	100%	$0.02	0.06	0.06
California	Metal Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,814	8	$184	3.9%	100%	$0.02	0.06	0.06
California	Metal Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	1,956	9	$596	7.0%	100%	$0.05	0.13	0.13
California	Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	24,420	12	$5,224	10%	100%	$0.03	2	2
California	Metal Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	3,644	10	$779	21%	100%	$0.03	0.72	0.72
California	Metal Mfg	Other	Bldg Improvements			Per Industry	Existing	4,416	15	$577	35%	100%	$0.02	1	1
California	Metal Mfg	Other	Facility Energy Management			Per Industry	Existing	398	2	$8	75%	100%	$0.01	0.28	0.28
California	Metal Mfg	Other	Transformers			Per Industry	Existing	346	30	$69	20%	100%	$0.02	0.06	0.06
California	Metal Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	12,047	10	$621	25%	100%	$0.01	2	2
California	Metal Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	15,315	10	$601	17%	100%	$0.01	2	2

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California	Metal Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	22,744	10	$2,456	29%	100%	$0.02	6	6
California	Metal Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,391	2	$29	43%	100%	$0.01	0.57	0.57
California	Metal Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	829	15	$284	73%	100%	$0.04	0.58	0.58
California	Metal Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	14,067	10	$452	3.1%	100%	$0.00	0.42	0.42
California	Metal Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,390	10	$857	35%	100%	$0.09	0.46	0.46
California	Metal Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	1,080	10	$497	35%	100%	$0.07	0.36	0.36
California	Metal Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	4,489	10	$1,405	17%	100%	$0.05	0.71	0.71
California	Metal Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	1,258	10	$173	17%	100%	$0.02	0.20	0.20
California	Metal Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	17,914	10	$7,440	17%	100%	$0.06	2	2
California	Metal Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,390	10	$432	17%	100%	$0.04	0.22	0.22
California	Metal Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	2,407	20	$631	8.0%	100%	$0.03	0.18	0.18
California	Metal Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	247	2	$5	75%	100%	$0.01	0.17	0.17
California	Metal Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	807	10	$710	34%	100%	$0.13	0.26	0.26
California	Metal Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	32,738	10	$6,689	35%	100%	$0.01	44	44
California	Metal Mfg	Process Heat	Metal: New Arc Furnace			Per Industry	Existing	7,833	10	$19,188	7.3%	100%	$0.01	14	14
California	Metal Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	1,848	2	$3,138	67%	100%	$0.02	65	65
California	Metal Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Metal Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Metal Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
California	Metal Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Metal Mfg	Pumps	Facility Energy Management			Per Industry	Existing	846	2	$17	75%	100%	$0.01	0.61	0.61
California	Metal Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	682	15	$297	72%	100%	$0.05	0.47	0.47
California	Metal Mfg	Pumps	Motor rewinds			Per Industry	Existing	273	9	$65	5.1%	100%	$0.04	0.01	0.01
California	Metal Mfg	Pumps	Synchronous Belts			Per Industry	Existing	514	10	$110	20%	100%	$0.03	0.10	0.10
California	Mining	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00
California	Mining	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
California	Mining	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	25%	100%	.	0.00	0.00
California	Mining	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
California	Mining	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00
California	Mining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
California	Mining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Mining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Mining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Mining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
California	Mining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	0.0%	100%	.	0.00	0.00
California	Mining	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
California	Mining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
California	Miscellaneous Mfg	Fans	Facility Energy Management			Per Industry	Existing	3,355	2	$70	5.5%	100%	$0.01	0.17	0.17
California	Miscellaneous Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	63,787	10	$5,467	23%	100%	$0.01	14	14
California	Miscellaneous Mfg	Fans	Fan System Optimization			Per Industry	Existing	14,013	10	$2,860	30%	100%	$0.03	4	4
California	Miscellaneous Mfg	Fans	High Efficiency Motors			Per Industry	Existing	2,704	15	$1,177	76%	100%	$0.05	1	1
California	Miscellaneous Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	11,183	10	$1,010	34%	100%	$0.01	3	3
California	Miscellaneous Mfg	Fans	Properly Sized Fans			Per Industry	Existing	18,992	10	$3,021	15%	100%	$0.02	2	2
California	Miscellaneous Mfg	Fans	Synchronous Belts			Per Industry	Existing	2,039	10	$436	21%	100%	$0.03	0.42	0.42
California	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	23,384	15	$3,438	14%	100%	$0.02	3	3
California	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	74,635	15	$7,001	5.0%	100%	$0.01	3	3
California	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	67,601	20	$22,509	1.0%	100%	$0.01	1	1
California	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	55,867	20	$7,503	6.5%	100%	$0.01	3	3
California	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	24,626	20	$16,738	2.5%	100%	$0.01	3	3
California	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	17,376	15	$2,512	45%	100%	$0.02	7	7
California	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	44,407	15	$5,054	20%	100%	$0.01	8	8
California	Miscellaneous Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	67,691	15	$367	2.5%	100%	$0.00	8	8
California	Miscellaneous Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	55,936	30	$14,627	4.0%	100%	$0.01	6	6
California	Miscellaneous Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	39,132	10	$7,003	33%	100%	$0.01	44	44
California	Miscellaneous Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	33,305	10	$913	74%	100%	$0.00	23	23

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Miscellaneous Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	79,518	15	$58,647	0.0%	100%	$0.23	0.00	0.00
California	Miscellaneous Mfg	Lighting	Facility Energy Management			Per Industry	Existing	8,789	2	$183	75%	100%	$0.01	6	6
California	Miscellaneous Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	26,790	20	$49,041	0.0%	100%	$3.58	0.00	0.00
California	Miscellaneous Mfg	Lighting	LED (High Bay)			Per Industry	Existing	88,260	20	$30,981	2.1%	100%	$1.64	1	1
California	Miscellaneous Mfg	Lighting	Lighting Controls			Per Industry	Existing	87,943	10	$11,268	28%	100%	$0.02	23	23
California	Miscellaneous Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	99,217	15	$96,460	40%	100%	$0.35	38	38
California	Miscellaneous Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	55,564	15	$15,863	0.0%	100%	$0.24	0.00	0.00
California	Miscellaneous Mfg	Lighting	Screw Base CFL			Per Industry	Existing	82,825	4	$7,916	10%	100%	$0.01	38	38
California	Miscellaneous Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	35,011	1	$6,234	0.0%	100%	$0.00	0.00	0.00
California	Miscellaneous Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	92,370	1	$5,473	0.0%	100%	$0.00	0.00	0.00
California	Miscellaneous Mfg	Lighting	Screw Base LED			Per Industry	Existing	85,978	12	$64,826	1.8%	100%	$0.02	6	6
California	Miscellaneous Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	43,755	13	$37,410	11%	100%	$0.47	15	15
California	Miscellaneous Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	16,219	13	$91,484	34%	100%	$0.10	37	37
California	Miscellaneous Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	89,685	13	$84,517	0.0%	100%	$0.12	0.00	0.00
California	Miscellaneous Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	20,230	13	$20,757	0.0%	100%	$0.13	0.00	0.00
California	Miscellaneous Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	13,509	2	$282	75%	100%	$0.01	9	9
California	Miscellaneous Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	10,888	15	$4,740	75%	100%	$0.05	7	7
California	Miscellaneous Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	25,481	10	$2,639	34%	100%	$0.01	8	8
California	Miscellaneous Mfg	Motors Other	Motors Other			Per Industry	Existing	5,821	15	$106	90%	100%	$0.00	5	5
California	Miscellaneous Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	4,061	10	$926	6.7%	100%	$0.03	0.26	0.26
California	Miscellaneous Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	7,554	11.2	$2,723	4.7%	100%	$0.05	0.34	0.34
California	Miscellaneous Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	4,016	8	$582	4.0%	100%	$0.02	0.15	0.15
California	Miscellaneous Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	4,089	8	$415	4.0%	100%	$0.02	0.15	0.15
California	Miscellaneous Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	4,408	9	$1,344	7.1%	100%	$0.05	0.29	0.29
California	Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	55,032	12	$11,773	10%	100%	$0.03	5	5
California	Miscellaneous Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	8,213	10	$1,757	21%	100%	$0.03	1	1
California	Miscellaneous Mfg	Other	Bldg Improvements			Per Industry	Existing	28,383	15	$3,711	35%	100%	$0.02	9	9
California	Miscellaneous Mfg	Other	Facility Energy Management			Per Industry	Existing	2,561	2	$53	75%	100%	$0.01	1	1
California	Miscellaneous Mfg	Other	Transformers			Per Industry	Existing	2,226	30	$444	20%	100%	$0.02	0.42	0.42
California	Miscellaneous Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	27,150	10	$1,400	26%	100%	$0.01	6	6

Table C-2.3. Industrial Measure Details

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California	Miscellaneous Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	3,136	2	$65	72%	100%	$0.01	2	2
California	Miscellaneous Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	1,869	15	$642	75%	100%	$0.04	1	1
California	Miscellaneous Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	31,702	10	$1,020	3.2%	100%	$0.00	0.98	0.98
California	Miscellaneous Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	3,134	10	$1,933	36%	100%	$0.09	1	1
California	Miscellaneous Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	2,435	10	$1,120	36%	100%	$0.07	0.83	0.83
California	Miscellaneous Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	10,118	10	$3,168	17%	100%	$0.05	1	1
California	Miscellaneous Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	2,835	10	$391	17%	100%	$0.02	0.46	0.46
California	Miscellaneous Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	40,370	10	$16,767	17%	100%	$0.06	6	6
California	Miscellaneous Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	3,134	10	$975	17%	100%	$0.04	0.51	0.51
California	Miscellaneous Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	34,988	20	$9,183	8.0%	100%	$0.03	2	2
California	Miscellaneous Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	3,602	2	$75	75%	100%	$0.01	2	2
California	Miscellaneous Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	11,740	10	$10,331	34%	100%	$0.13	3	3
California	Miscellaneous Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	87,002	10	$4,384	36%	100%	$0.01	30	30
California	Miscellaneous Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	66,756	2	$2,057	70%	100%	$0.02	44	44
California	Miscellaneous Mfg	Process Other	Facility Energy Management			Per Industry	Existing	263	2	$5	75%	100%	$0.01	0.19	0.19
California	Miscellaneous Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	138	10	$22	34%	100%	$0.02	0.04	0.04
California	Miscellaneous Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	155	3	$9	85%	100%	$0.02	0.12	0.12
California	Miscellaneous Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	13	10	$2	21%	100%	$0.03	0.00	0.00
California	Miscellaneous Mfg	Pumps	Facility Energy Management			Per Industry	Existing	1,907	2	$39	60%	100%	$0.01	1	1
California	Miscellaneous Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	1,537	15	$669	76%	100%	$0.05	1	1
California	Miscellaneous Mfg	Pumps	Motor rewinds			Per Industry	Existing	616	9	$147	5.3%	100%	$0.04	0.03	0.03
California	Miscellaneous Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	20,726	12	$2,590	34%	100%	$0.02	6	6
California	Miscellaneous Mfg	Pumps	Pump System Optimization			Per Industry	Existing	12,536	12	$3,222	16%	100%	$0.03	1	1
California	Miscellaneous Mfg	Pumps	Synchronous Belts			Per Industry	Existing	1,159	10	$248	21%	100%	$0.03	0.23	0.23
California	Paper Mfg	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	8.5%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	12%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	14%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	24%	100%	.	0.00	0.00
California	Paper Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	61%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Paper: Premium Fan			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Paper Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	12%	100%	.	0.00	0.00
California	Paper Mfg	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	32%	100%	.	0.00	0.00
California	Paper Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	72%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
California	Paper Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Paper Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	60%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	72%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	5.4%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	3.8%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	5.6%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Paper: Large Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Paper: Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Paper: Premium Control Large Material			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	8.4%	100%	.	0.00	0.00
California	Paper Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Paper Mfg	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
California	Paper Mfg	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	50%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	59%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	2.4%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
California	Paper Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Paper Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	0.00	20	$0.00	8.0%	100%	.	0.00	0.00
California	Paper Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Paper Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
California	Paper Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	0.00	2	$0.00	64%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Kraft: Efficient Agitator			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Kraft: Effluent Treatment System			Per Industry	Existing	0.00	10	$0.00	7.3%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Mech Pulp: Premium Process			Per Industry	Existing	0.00	5	$0.00	18%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement			Per Industry	Existing	0.00	1	$0.00	28%	100%	.	0.00	0.00
California	Paper Mfg	Process Other	Paper: Efficient Pulp Screen			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
California	Paper Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
California	Paper Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	67%	100%	.	0.00	0.00
California	Paper Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	62%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	4.4%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	0.00	12	$0.00	28%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	Pump System Optimization			Per Industry	Existing	0.00	12	$0.00	75%	100%	.	0.00	0.00
California	Paper Mfg	Pumps	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Petroleum Refining	Fans	Facility Energy Management			Per Industry	Existing	1,116	2	$23	3.0%	100%	$0.01	0.03	0.03
California	Petroleum Refining	Fans	Fan System Optimization			Per Industry	Existing	4,663	10	$952	30%	100%	$0.03	1	1
California	Petroleum Refining	Fans	High Efficiency Motors			Per Industry	Existing	900	15	$391	76%	100%	$0.05	0.65	0.65
California	Petroleum Refining	Fans	Improved Controls - Fans			Per Industry	Existing	3,721	10	$336	34%	100%	$0.01	1	1
California	Petroleum Refining	Fans	Properly Sized Fans			Per Industry	Existing	6,320	10	$1,005	15%	100%	$0.02	0.91	0.91
California	Petroleum Refining	Fans	Synchronous Belts			Per Industry	Existing	678	10	$145	21%	100%	$0.03	0.13	0.13
California	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	618	15	$90	14%	100%	$0.02	0.08	0.08
California	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	1,974	15	$185	5.0%	100%	$0.01	0.09	0.09
California	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	4,434	20	$595	1.0%	100%	$0.01	0.04	0.04

Table C-2.3. Industrial Measure Details

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California	Petroleum Refining	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	1,478	20	$198	6.5%	100%	$0.01	0.09	0.09
California	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	3,297	20	$442	2.5%	100%	$0.01	0.07	0.07
California	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	459	15	$66	45%	100%	$0.02	0.19	0.19
California	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	1,174	15	$133	20%	100%	$0.01	0.22	0.22
California	Petroleum Refining	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	9,728	15	$9	2.5%	100%	$0.00	0.23	0.23
California	Petroleum Refining	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	4,125	30	$387	4.0%	100%	$0.01	0.15	0.15
California	Petroleum Refining	Hvac	Improved Controls - HVAC			Per Industry	Existing	3,681	10	$185	33%	100%	$0.01	1	1
California	Petroleum Refining	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	881	10	$24	73%	100%	$0.00	0.62	0.62
California	Petroleum Refining	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	2,252	15	$4,493	0.0%	100%	$0.23	0.00	0.00
California	Petroleum Refining	Lighting	Facility Energy Management			Per Industry	Existing	248	2	$5	75%	100%	$0.01	0.17	0.17
California	Petroleum Refining	Lighting	Induction (High Bay)			Per Industry	Existing	758	20	$26,883	0.0%	100%	$3.58	0.00	0.00
California	Petroleum Refining	Lighting	LED (High Bay)			Per Industry	Existing	2,500	20	$40,534	2.1%	100%	$1.64	0.05	0.05
California	Petroleum Refining	Lighting	Lighting Controls			Per Industry	Existing	2,491	10	$319	28%	100%	$0.02	0.67	0.67
California	Petroleum Refining	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	2,810	15	$8,397	40%	100%	$0.35	1	1
California	Petroleum Refining	Lighting	Metal Halide (High Bay)			Per Industry	Existing	1,573	15	$3,282	0.0%	100%	$0.24	0.00	0.00
California	Petroleum Refining	Lighting	Screw Base CFL			Per Industry	Existing	10,844	4	$224	10%	100%	$0.01	1	1
California	Petroleum Refining	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	9,489	1	$176	0.0%	100%	$0.00	0.00	0.00
California	Petroleum Refining	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	2,616	1	$155	0.0%	100%	$0.00	0.00	0.00
California	Petroleum Refining	Lighting	Screw Base LED			Per Industry	Existing	10,933	12	$1,836	1.8%	100%	$0.02	0.19	0.19
California	Petroleum Refining	Lighting	T5 Linear Florescent			Per Industry	Existing	4,072	13	$15,222	11%	100%	$0.47	0.44	0.44
California	Petroleum Refining	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	3,292	13	$2,591	34%	100%	$0.10	1	1
California	Petroleum Refining	Lighting	T8 Linear Florescent			Per Industry	Existing	2,540	13	$2,394	0.0%	100%	$0.12	0.00	0.00
California	Petroleum Refining	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	3,405	13	$3,420	0.0%	100%	$0.13	0.00	0.00
California	Petroleum Refining	Motors Other	Facility Energy Management			Per Industry	Existing	3,178	2	$66	75%	100%	$0.01	2	2
California	Petroleum Refining	Motors Other	High Efficiency Motors			Per Industry	Existing	2,562	15	$1,115	76%	100%	$0.05	1	1

Table C-2.3. Industrial Measure Details

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California	Petroleum Refining	Motors Other	Improved Controls - Motors			Per Industry	Existing	5,996	10	$621	34%	100%	$0.01	1	1
California	Petroleum Refining	Motors Other	Motors Other			Per Industry	Existing	1,369	15	$24	91%	100%	$0.00	1	1
California	Petroleum Refining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	955	10	$218	6.8%	100%	$0.03	0.06	0.06
California	Petroleum Refining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	1,777	11.2	$640	4.8%	100%	$0.05	0.08	0.08
California	Petroleum Refining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	945	8	$137	4.1%	100%	$0.02	0.03	0.03
California	Petroleum Refining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	962	8	$97	4.1%	100%	$0.02	0.03	0.03
California	Petroleum Refining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	1,037	9	$316	7.2%	100%	$0.05	0.07	0.07
California	Petroleum Refining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	12,949	12	$2,770	11%	100%	$0.03	1	1
California	Petroleum Refining	Motors Other	Synchronous Belts			Per Industry	Existing	1,932	10	$413	21%	100%	$0.03	0.39	0.39
California	Petroleum Refining	Other	Bldg Improvements			Per Industry	Existing	1,270	15	$166	35%	100%	$0.02	0.42	0.42
California	Petroleum Refining	Other	Facility Energy Management			Per Industry	Existing	114	2	$2	75%	100%	$0.01	0.08	0.08
California	Petroleum Refining	Other	Transformers			Per Industry	Existing	99	30	$19	20%	100%	$0.02	0.01	0.01
California	Petroleum Refining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	11,149	10	$574	27%	100%	$0.01	2	2
California	Petroleum Refining	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	14,173	10	$556	18%	100%	$0.01	2	2
California	Petroleum Refining	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	21,048	10	$2,273	31%	100%	$0.02	6	6
California	Petroleum Refining	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,287	2	$26	41%	100%	$0.01	0.51	0.51
California	Petroleum Refining	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	767	15	$263	77%	100%	$0.04	0.57	0.57
California	Petroleum Refining	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	13,018	10	$418	3.3%	100%	$0.00	0.41	0.41
California	Petroleum Refining	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,287	10	$793	35%	100%	$0.09	0.43	0.43
California	Petroleum Refining	Process Aircomp	Outside Air Intake			Per Industry	Existing	1,000	10	$459	35%	100%	$0.07	0.33	0.33
California	Petroleum Refining	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	4,155	10	$1,301	18%	100%	$0.05	0.70	0.70
California	Petroleum Refining	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	1,164	10	$160	18%	100%	$0.02	0.19	0.19
California	Petroleum Refining	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	16,578	10	$6,885	18%	100%	$0.06	2	2
California	Petroleum Refining	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,287	10	$400	18%	100%	$0.04	0.21	0.21
California	Petroleum Refining	Process Cool	Equipment: Chillers			Per Industry	Existing	5,476	20	$1,437	8.0%	100%	$0.03	0.42	0.42
California	Petroleum Refining	Process Cool	Facility Energy Management			Per Industry	Existing	563	2	$11	75%	100%	$0.01	0.40	0.40
California	Petroleum Refining	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	1,837	10	$1,617	34%	100%	$0.13	0.59	0.59
California	Petroleum Refining	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	9,297	10	$468	33%	100%	$0.01	2	2
California	Petroleum Refining	Process Heat	Process Heat O&M			Per Industry	Existing	7,134	2	$219	63%	100%	$0.02	4	4
California	Petroleum Refining	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00

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California	Petroleum Refining	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	3,460	10	$548	34%	100%	$0.02	1	1
California	Petroleum Refining	Process Refrig	Optimization of operating parameters			Per Industry	Existing	3,874	3	$239	85%	100%	$0.02	3	3
California	Petroleum Refining	Process Refrig	Synchronous Belts			Per Industry	Existing	332	10	$71	21%	100%	$0.03	0.06	0.06
California	Petroleum Refining	Pumps	Facility Energy Management			Per Industry	Existing	2,021	2	$42	75%	100%	$0.01	1	1
California	Petroleum Refining	Pumps	High Efficiency Motors			Per Industry	Existing	1,629	15	$709	79%	100%	$0.05	1	1
California	Petroleum Refining	Pumps	Motor rewinds			Per Industry	Existing	653	9	$156	5.5%	100%	$0.04	0.03	0.03
California	Petroleum Refining	Pumps	Pump Equipment Upgrade			Per Industry	Existing	21,959	12	$2,744	35%	100%	$0.02	7	7
California	Petroleum Refining	Pumps	Pump System Optimization			Per Industry	Existing	13,282	12	$3,414	75%	100%	$0.03	9	9
California	Petroleum Refining	Pumps	Synchronous Belts			Per Industry	Existing	1,228	10	$262	22%	100%	$0.03	0.26	0.26
California	Stone Clay Glass Products	Fans	Facility Energy Management			Per Industry	Existing	2,481	2	$51	25%	100%	$0.01	0.60	0.60
California	Stone Clay Glass Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	47,174	10	$4,043	23%	100%	$0.01	10	10
California	Stone Clay Glass Products	Fans	High Efficiency Motors			Per Industry	Existing	1,999	15	$870	76%	100%	$0.05	1	1
California	Stone Clay Glass Products	Fans	Improved Controls - Fans			Per Industry	Existing	8,270	10	$747	34%	100%	$0.01	2	2
California	Stone Clay Glass Products	Fans	Properly Sized Fans			Per Industry	Existing	14,045	10	$2,234	15%	100%	$0.02	2	2
California	Stone Clay Glass Products	Fans	Synchronous Belts			Per Industry	Existing	1,508	10	$322	21%	100%	$0.03	0.31	0.31
California	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	3,609	15	$530	14%	100%	$0.02	0.46	0.46
California	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	11,519	15	$1,080	5.0%	100%	$0.01	0.55	0.55
California	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	25,868	20	$3,474	1.0%	100%	$0.01	0.24	0.24
California	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	8,622	20	$1,158	6.5%	100%	$0.01	0.53	0.53
California	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	19,235	20	$2,583	2.5%	100%	$0.01	0.46	0.46
California	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	2,681	15	$387	45%	100%	$0.02	1	1
California	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	6,853	15	$780	20%	100%	$0.01	1	1
California	Stone Clay Glass Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	56,750	15	$56	2.5%	100%	$0.00	1	1

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Stone Clay Glass Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	24,067	30	$2,257	4.0%	100%	$0.01	0.92	0.92
California	Stone Clay Glass Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	21,473	10	$1,080	33%	100%	$0.01	6	6
California	Stone Clay Glass Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	5,140	10	$140	74%	100%	$0.00	3	3
California	Stone Clay Glass Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	13,299	15	$26,533	0.0%	100%	$0.23	0.00	0.00
California	Stone Clay Glass Products	Lighting	Facility Energy Management			Per Industry	Existing	1,470	2	$30	75%	100%	$0.01	1	1
California	Stone Clay Glass Products	Lighting	Induction (High Bay)			Per Industry	Existing	4,480	20	$58,726	0.0%	100%	$3.58	0.00	0.00
California	Stone Clay Glass Products	Lighting	LED (High Bay)			Per Industry	Existing	14,761	20	$39,329	2.1%	100%	$1.64	0.30	0.30
California	Stone Clay Glass Products	Lighting	Lighting Controls			Per Industry	Existing	14,708	10	$1,884	28%	100%	$0.02	3	3
California	Stone Clay Glass Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	16,594	15	$49,582	40%	100%	$0.35	6	6
California	Stone Clay Glass Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	9,293	15	$19,378	0.0%	100%	$0.24	0.00	0.00
California	Stone Clay Glass Products	Lighting	Screw Base CFL			Per Industry	Existing	64,027	4	$1,324	10%	100%	$0.01	6	6
California	Stone Clay Glass Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	56,030	1	$1,042	0.0%	100%	$0.00	0.00	0.00
California	Stone Clay Glass Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	15,448	1	$915	0.0%	100%	$0.00	0.00	0.00
California	Stone Clay Glass Products	Lighting	Screw Base LED			Per Industry	Existing	64,554	12	$10,842	1.8%	100%	$0.02	1	1
California	Stone Clay Glass Products	Lighting	T5 Linear Florescent			Per Industry	Existing	24,042	13	$89,881	11%	100%	$0.47	2	2
California	Stone Clay Glass Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	19,437	13	$15,300	34%	100%	$0.10	6	6
California	Stone Clay Glass Products	Lighting	T8 Linear Florescent			Per Industry	Existing	14,999	13	$14,135	0.0%	100%	$0.12	0.00	0.00
California	Stone Clay Glass Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	20,108	13	$20,196	0.0%	100%	$0.13	0.00	0.00
California	Stone Clay Glass Products	Motors Other	Facility Energy Management			Per Industry	Existing	7,063	2	$147	75%	100%	$0.01	5	5
California	Stone Clay Glass Products	Motors Other	High Efficiency Motors			Per Industry	Existing	5,693	15	$2,478	75%	100%	$0.05	4	4
California	Stone Clay Glass Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	13,324	10	$1,380	34%	100%	$0.01	4	4

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Stone Clay Glass Products	Motors Other	Motors Other			Per Industry	Existing	3,044	15	$55	90%	100%	$0.00	2	2
California	Stone Clay Glass Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	2,123	10	$484	6.7%	100%	$0.03	0.13	0.13
California	Stone Clay Glass Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	3,950	11.2	$1,424	4.7%	100%	$0.05	0.17	0.17
California	Stone Clay Glass Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	2,100	8	$304	4.0%	100%	$0.02	0.08	0.08
California	Stone Clay Glass Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	2,138	8	$217	4.0%	100%	$0.02	0.08	0.08
California	Stone Clay Glass Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	2,305	9	$703	7.1%	100%	$0.05	0.15	0.15
California	Stone Clay Glass Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	28,776	12	$6,156	10%	100%	$0.03	2	2
California	Stone Clay Glass Products	Motors Other	Synchronous Belts			Per Industry	Existing	4,294	10	$918	21%	100%	$0.03	0.86	0.86
California	Stone Clay Glass Products	Other	Bldg Improvements			Per Industry	Existing	14,966	15	$1,957	35%	100%	$0.02	5	5
California	Stone Clay Glass Products	Other	Facility Energy Management			Per Industry	Existing	1,350	2	$28	75%	100%	$0.01	0.97	0.97
California	Stone Clay Glass Products	Other	Transformers			Per Industry	Existing	1,173	30	$234	20%	100%	$0.02	0.22	0.22
California	Stone Clay Glass Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	24,776	10	$1,277	26%	100%	$0.01	6	6
California	Stone Clay Glass Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	31,496	10	$1,237	17%	100%	$0.01	5	5
California	Stone Clay Glass Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	46,773	10	$5,052	30%	100%	$0.02	13	13
California	Stone Clay Glass Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	2,861	2	$59	42%	100%	$0.01	1	1
California	Stone Clay Glass Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	1,705	15	$585	75%	100%	$0.04	1	1
California	Stone Clay Glass Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	28,930	10	$930	3.2%	100%	$0.00	0.89	0.89
California	Stone Clay Glass Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	2,860	10	$1,764	36%	100%	$0.09	0.98	0.98
California	Stone Clay Glass Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	2,222	10	$1,022	36%	100%	$0.07	0.76	0.76
California	Stone Clay Glass Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	9,233	10	$2,891	17%	100%	$0.05	1	1
California	Stone Clay Glass Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	2,587	10	$357	17%	100%	$0.02	0.42	0.42

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California	Stone Clay Glass Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	36,840	10	$15,301	17%	100%	$0.06	6	6
California	Stone Clay Glass Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	2,860	10	$890	17%	100%	$0.04	0.46	0.46
California	Stone Clay Glass Products	Process Cool	Equipment: Chillers			Per Industry	Existing	10,242	20	$2,688	8.0%	100%	$0.03	0.78	0.78
California	Stone Clay Glass Products	Process Cool	Facility Energy Management			Per Industry	Existing	1,054	2	$22	75%	100%	$0.01	0.76	0.76
California	Stone Clay Glass Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	3,436	10	$3,024	34%	100%	$0.13	1	1
California	Stone Clay Glass Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	96,281	10	$4,852	36%	100%	$0.01	33	33
California	Stone Clay Glass Products	Process Heat	Process Heat O&M			Per Industry	Existing	73,875	2	$2,276	70%	100%	$0.02	49	49
California	Stone Clay Glass Products	Process Other	Facility Energy Management			Per Industry	Existing	184	2	$3	75%	100%	$0.01	0.13	0.13
California	Stone Clay Glass Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	7,690	10	$1,219	34%	100%	$0.02	2	2
California	Stone Clay Glass Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	8,609	3	$532	85%	100%	$0.02	7	7
California	Stone Clay Glass Products	Process Refrig	Synchronous Belts			Per Industry	Existing	737	10	$157	21%	100%	$0.03	0.14	0.14
California	Stone Clay Glass Products	Pumps	Facility Energy Management			Per Industry	Existing	4,491	2	$94	75%	100%	$0.01	3	3
California	Stone Clay Glass Products	Pumps	High Efficiency Motors			Per Industry	Existing	3,620	15	$1,576	76%	100%	$0.05	2	2
California	Stone Clay Glass Products	Pumps	Motor rewinds			Per Industry	Existing	1,451	9	$346	5.3%	100%	$0.04	0.07	0.07
California	Stone Clay Glass Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	48,797	12	$6,099	34%	100%	$0.02	15	15
California	Stone Clay Glass Products	Pumps	Synchronous Belts			Per Industry	Existing	2,730	10	$584	21%	100%	$0.03	0.55	0.55
California	Transportation Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	531	2	$11	5.3%	100%	$0.01	0.02	0.02
California	Transportation Equipment Mfg	Fans	Fan System Optimization			Per Industry	Existing	2,218	10	$452	30%	100%	$0.03	0.64	0.64
California	Transportation Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	428	15	$186	76%	100%	$0.05	0.31	0.31
California	Transportation Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	1,770	10	$160	34%	100%	$0.01	0.58	0.58
California	Transportation Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	3,006	10	$478	15%	100%	$0.02	0.44	0.44

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California	Transportation Equipment Mfg	Fans	Synchronous Belts			Per Industry	Existing	322	10	$69	21%	100%	$0.03	0.06	0.06
California	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	3,740	15	$549	14%	100%	$0.02	0.48	0.48
California	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	11,937	15	$1,119	5.0%	100%	$0.01	0.57	0.57
California	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	26,806	20	$3,600	1.0%	100%	$0.01	0.25	0.25
California	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	8,935	20	$1,200	6.5%	100%	$0.01	0.55	0.55
California	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	19,932	20	$2,677	2.5%	100%	$0.01	0.47	0.47
California	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	2,779	15	$401	45%	100%	$0.02	1	1
California	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	7,102	15	$808	20%	100%	$0.01	1	1
California	Transportation Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	58,809	15	$58	2.5%	100%	$0.00	1	1
California	Transportation Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	24,940	30	$2,339	4.0%	100%	$0.01	0.96	0.96
California	Transportation Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	22,252	10	$1,120	33%	100%	$0.01	7	7
California	Transportation Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	5,326	10	$146	74%	100%	$0.00	3	3
California	Transportation Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	13,892	15	$27,716	0.0%	100%	$0.23	0.00	0.00
California	Transportation Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	1,535	2	$32	75%	100%	$0.01	1	1
California	Transportation Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	4,680	20	$65,803	0.0%	100%	$3.58	0.00	0.00
California	Transportation Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	15,419	20	$50,001	2.1%	100%	$1.64	0.31	0.31
California	Transportation Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	15,364	10	$1,968	28%	100%	$0.02	4	4
California	Transportation Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	17,333	15	$51,793	40%	100%	$0.35	6	6
California	Transportation Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	9,707	15	$20,242	0.0%	100%	$0.24	0.00	0.00

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California	Transportation Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	66,882	4	$1,383	10%	100%	$0.01	6	6
California	Transportation Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	58,528	1	$1,089	0.0%	100%	$0.00	0.00	0.00
California	Transportation Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	16,137	1	$956	0.0%	100%	$0.00	0.00	0.00
California	Transportation Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	67,432	12	$11,325	1.8%	100%	$0.02	1	1
California	Transportation Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	25,115	13	$93,889	11%	100%	$0.47	2	2
California	Transportation Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	20,304	13	$15,983	34%	100%	$0.10	6	6
California	Transportation Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	15,668	13	$14,765	0.0%	100%	$0.12	0.00	0.00
California	Transportation Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	21,005	13	$21,097	0.0%	100%	$0.13	0.00	0.00
California	Transportation Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	1,191	2	$24	75%	100%	$0.01	0.86	0.86
California	Transportation Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	960	15	$418	75%	100%	$0.05	0.69	0.69
California	Transportation Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	2,248	10	$232	34%	100%	$0.01	0.72	0.72
California	Transportation Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	513	15	$9	90%	100%	$0.00	0.44	0.44
California	Transportation Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	358	10	$81	6.7%	100%	$0.03	0.02	0.02
California	Transportation Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	666	11.2	$240	4.7%	100%	$0.05	0.03	0.03
California	Transportation Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	354	8	$51	4.0%	100%	$0.02	0.01	0.01
California	Transportation Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	360	8	$36	4.0%	100%	$0.02	0.01	0.01
California	Transportation Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	388	9	$118	7.1%	100%	$0.05	0.02	0.02
California	Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	4,855	12	$1,038	10%	100%	$0.03	0.49	0.49
California	Transportation Equipment Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	724	10	$155	21%	100%	$0.03	0.14	0.14
California	Transportation Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	4,720	15	$617	35%	100%	$0.02	1	1
California	Transportation Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	426	2	$8	75%	100%	$0.01	0.30	0.30

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California	Transportation Equipment Mfg	Other	Transformers			Per Industry	Existing	370	30	$73	20%	100%	$0.02	0.07	0.07
California	Transportation Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	10,705	10	$552	26%	100%	$0.01	2	2
California	Transportation Equipment Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	13,608	10	$534	17%	100%	$0.01	2	2
California	Transportation Equipment Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	20,210	10	$2,182	30%	100%	$0.02	5	5
California	Transportation Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,236	2	$25	42%	100%	$0.01	0.50	0.50
California	Transportation Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	737	15	$253	75%	100%	$0.04	0.53	0.53
California	Transportation Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	12,500	10	$402	3.2%	100%	$0.00	0.38	0.38
California	Transportation Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,235	10	$762	36%	100%	$0.09	0.42	0.42
California	Transportation Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	960	10	$441	36%	100%	$0.07	0.32	0.32
California	Transportation Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	3,989	10	$1,249	17%	100%	$0.05	0.65	0.65
California	Transportation Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	1,118	10	$154	17%	100%	$0.02	0.18	0.18
California	Transportation Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	15,917	10	$6,611	17%	100%	$0.06	2	2
California	Transportation Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,235	10	$384	17%	100%	$0.04	0.20	0.20
California	Transportation Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	4,503	20	$1,181	8.0%	100%	$0.03	0.34	0.34
California	Transportation Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	463	2	$9	75%	100%	$0.01	0.33	0.33
California	Transportation Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	1,511	10	$1,329	34%	100%	$0.13	0.49	0.49
California	Transportation Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	15,384	10	$775	36%	100%	$0.01	5	5
California	Transportation Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	11,804	2	$363	70%	100%	$0.02	7	7
California	Transportation Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	134	2	$2	75%	100%	$0.01	0.09	0.09
California	Transportation Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	2,178	10	$345	34%	100%	$0.02	0.71	0.71
California	Transportation Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	2,438	3	$150	85%	100%	$0.02	1	1

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California	Transportation Equipment Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	208	10	$44	21%	100%	$0.03	0.04	0.04
California	Transportation Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	1,160	2	$24	75%	100%	$0.01	0.83	0.83
California	Transportation Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	935	15	$407	76%	100%	$0.05	0.68	0.68
California	Transportation Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	374	9	$89	5.3%	100%	$0.04	0.01	0.01
California	Transportation Equipment Mfg	Pumps	Synchronous Belts			Per Industry	Existing	705	10	$150	21%	100%	$0.03	0.14	0.14
California	Wastewater	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
California	Wastewater	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	3.0%	100%	.	0.00	0.00
California	Wastewater	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
California	Wastewater	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00
California	Wastewater	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Wastewater	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
California	Wastewater	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
California	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
California	Wastewater	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
California	Wastewater	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
California	Wastewater	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
California	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
California	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
California	Wastewater	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
California	Wastewater	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
California	Wastewater	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Wastewater	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
California	Wastewater	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
California	Wastewater	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00
California	Wastewater	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
California	Wastewater	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
California	Wastewater	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
California	Wastewater	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
California	Wastewater	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	11%	100%	.	0.00	0.00
California	Wastewater	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Wastewater	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
California	Wastewater	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00
California	Wastewater	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	26%	100%	.	0.00	0.00
California	Wastewater	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
California	Wastewater	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Wastewater	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	66%	100%	.	0.00	0.00
California	Wastewater	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	8.8%	100%	.	0.00	0.00
California	Wastewater	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	5.3%	100%	.	0.00	0.00
California	Wastewater	Pumps	Pump Equipment Upgrade			Per Industry	Existing	0.00	12	$0.00	34%	100%	.	0.00	0.00
California	Wastewater	Pumps	Pump System Optimization			Per Industry	Existing	0.00	12	$0.00	75%	100%	.	0.00	0.00
California	Wastewater	Pumps	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
California	Water	Fans	Efficient Centrifugal Fan			Per Industry	Existing	43,422	10	$7,894	11%	100%	$0.03	4	4
California	Water	Fans	Facility Energy Management			Per Industry	Existing	3,997	2	$83	3.0%	100%	$0.01	0.11	0.11
California	Water	Fans	Fan Equipment Upgrade			Per Industry	Existing	75,988	10	$6,513	23%	100%	$0.01	16	16
California	Water	Fans	Fan System Optimization			Per Industry	Existing	16,693	10	$3,408	30%	100%	$0.03	4	4
California	Water	Fans	High Efficiency Motors			Per Industry	Existing	3,221	15	$1,402	75%	100%	$0.05	2	2
California	Water	Fans	Improved Controls - Fans			Per Industry	Existing	13,322	10	$1,204	34%	100%	$0.01	4	4
California	Water	Fans	Properly Sized Fans			Per Industry	Existing	22,625	10	$3,599	15%	100%	$0.02	3	3
California	Water	Fans	Synchronous Belts			Per Industry	Existing	2,430	10	$519	21%	100%	$0.03	0.49	0.49
California	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
California	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
California	Water	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
California	Water	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
California	Water	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
California	Water	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
California	Water	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
California	Water	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Water	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
California	Water	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
California	Water	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
California	Water	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	6,940	15	$13,846	0.0%	100%	$0.23	0.00	0.00
California	Water	Lighting	Facility Energy Management			Per Industry	Existing	767	2	$16	75%	100%	$0.01	0.55	0.55
California	Water	Lighting	Induction (High Bay)			Per Industry	Existing	2,338	20	$82,828	0.0%	100%	$3.58	0.00	0.00
California	Water	Lighting	LED (High Bay)			Per Industry	Existing	7,703	20	$24,890	2.1%	100%	$1.64	0.15	0.15
California	Water	Lighting	Lighting Controls			Per Industry	Existing	7,675	10	$983	28%	100%	$0.02	2	2
California	Water	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	8,659	15	$25,873	40%	100%	$0.35	3	3
California	Water	Lighting	Metal Halide (High Bay)			Per Industry	Existing	4,849	15	$10,112	0.0%	100%	$0.24	0.00	0.00
California	Water	Lighting	Screw Base CFL			Per Industry	Existing	33,411	4	$690	10%	100%	$0.01	3	3
California	Water	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	29,238	1	$544	0.0%	100%	$0.00	0.00	0.00
California	Water	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	8,061	1	$477	0.0%	100%	$0.00	0.00	0.00
California	Water	Lighting	Screw Base LED			Per Industry	Existing	33,686	12	$5,657	1.8%	100%	$0.02	0.59	0.59
California	Water	Lighting	T5 Linear Florescent			Per Industry	Existing	12,546	13	$46,903	11%	100%	$0.47	1	1
California	Water	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	10,143	13	$7,984	34%	100%	$0.10	3	3
California	Water	Lighting	T8 Linear Florescent			Per Industry	Existing	7,827	13	$7,376	0.0%	100%	$0.12	0.00	0.00
California	Water	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	10,493	13	$10,539	0.0%	100%	$0.13	0.00	0.00
California	Water	Motors Other	Facility Energy Management			Per Industry	Existing	3,997	2	$83	75%	100%	$0.01	2	2
California	Water	Motors Other	High Efficiency Motors			Per Industry	Existing	3,221	15	$1,402	75%	100%	$0.05	2	2
California	Water	Motors Other	Improved Controls - Motors			Per Industry	Existing	7,539	10	$780	34%	100%	$0.01	2	2
California	Water	Motors Other	Motors Other			Per Industry	Existing	1,722	15	$31	90%	100%	$0.00	1	1
California	Water	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,201	10	$274	6.7%	100%	$0.03	0.07	0.07
California	Water	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	2,235	11.2	$805	4.7%	100%	$0.05	0.10	0.10
California	Water	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	1,188	8	$172	4.0%	100%	$0.02	0.04	0.04
California	Water	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,210	8	$123	4.0%	100%	$0.02	0.04	0.04
California	Water	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	1,304	9	$397	7.1%	100%	$0.05	0.08	0.08
California	Water	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	16,283	12	$3,483	11%	100%	$0.03	1	1
California	Water	Motors Other	Synchronous Belts			Per Industry	Existing	2,430	10	$519	21%	100%	$0.03	0.49	0.49
California	Water	Other	Bldg Improvements			Per Industry	Existing	63,976	15	$8,365	35%	100%	$0.02	21	21
California	Water	Other	Facility Energy Management			Per Industry	Existing	5,773	2	$120	75%	100%	$0.01	4	4
California	Water	Other	Transformers			Per Industry	Existing	5,017	30	$1,001	20%	100%	$0.02	0.96	0.96

Table C-2.3. Industrial Measure Details

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California	Water	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Water	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Water	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Water	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
California	Water	Pumps	Facility Energy Management			Per Industry	Existing	25,840	2	$540	60%	100%	$0.01	14	14
California	Water	Pumps	High Efficiency Motors			Per Industry	Existing	20,826	15	$9,067	75%	100%	$0.05	15	15
California	Water	Pumps	Motor rewinds			Per Industry	Existing	8,347	9	$1,995	5.3%	100%	$0.04	0.42	0.42
California	Water	Pumps	Pump Equipment Upgrade			Per Industry	Existing	80,709	12	$35,088	34%	100%	$0.02	90	90
California	Water	Pumps	Pump System Optimization			Per Industry	Existing	69,793	12	$43,644	15%	100%	$0.03	25	25
California	Water	Pumps	Synchronous Belts			Per Industry	Existing	15,709	10	$3,360	21%	100%	$0.03	3	3
Idaho	Agriculture	Fans	Circulating Fans			Per Industry	Existing	93,591	10	$77,362	32%	100%	$0.21	217	217
Idaho	Agriculture	Fans	High-efficiency Ventilation Systems			Per Industry	Existing	85,358	10	$7,333	32%	100%	$0.29	246	246
Idaho	Agriculture	Fans	Programmable Ventilation Controllers			Per Industry	Existing	13,871	10	$1,563	32%	100%	$0.02	4	4
Idaho	Agriculture	Motors Other	VFDs - Potato / Onion Shed			Per Industry	Existing	13,662	10	$82,667	0.1%	100%	$0.05	5	5
Idaho	Agriculture	Other	Agricultural Engine Block Heater Timers			Per Industry	Existing	54,316	10	$15,620	18%	100%	$0.01	45	45
Idaho	Agriculture	Process Cool	Milk Precoolers			Per Industry	Existing	49,860	15	$78,590	0.4%	100%	$0.06	0.61	0.61
Idaho	Agriculture	Process Heat	Heat Lamp Setback (Microzone)			Per Industry	Existing	62,423	15	$10,611	1.4%	100%	$0.02	0.85	0.85
Idaho	Agriculture	Process Heat	Heat Lamp/Heating Pad Controller			Per Industry	Existing	42,757	15	$25,379	1.4%	100%	$0.01	3	3
Idaho	Agriculture	Process Heat	Heat Lamps			Per Industry	Existing	68,174	10	$8,843	1.4%	100%	$0.00	6	6
Idaho	Agriculture	Process Heat	Heat Reclaimers			Per Industry	Existing	56,534	15	$4,985	0.4%	100%	$0.08	6	6
Idaho	Agriculture	Process Heat	High-efficiency Livestock Waterers			Per Industry	Existing	60,581	10	$80,861	32%	100%	$0.06	490	490
Idaho	Agriculture	Pumps	Automatic Milker Takeoffs			Per Industry	Existing	77,436	15	$70,601	0.4%	100%	$0.08	1	1
Idaho	Agriculture	Pumps	VFDs for Dairy Vacuum Pumps			Per Industry	Existing	9,928	15	$34,281	0.4%	100%	$0.02	22	22
Idaho	Chemical Mfg	Fans	Facility Energy Management			Per Industry	Existing	12,333	2	$258	27%	100%	$0.01	3	3
Idaho	Chemical Mfg	Fans	High Efficiency Motors			Per Industry	Existing	9,940	15	$4,327	73%	100%	$0.05	7	7
Idaho	Chemical Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	41,106	10	$3,714	33%	100%	$0.04	13	13
Idaho	Chemical Mfg	Fans	Properly Sized Fans			Per Industry	Existing	69,809	10	$11,105	15%	100%	$0.02	10	10
Idaho	Chemical Mfg	Fans	Synchronous Belts			Per Industry	Existing	7,498	10	$1,604	21%	100%	$0.03	1	1
Idaho	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	19,965	15	$2,935	14%	100%	$0.02	2	2
Idaho	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	63,722	15	$5,977	5.0%	100%	$0.01	3	3
Idaho	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	43,095	20	$19,218	1.0%	100%	$0.01	1	1

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Idaho	Chemical Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	47,698	20	$6,406	6.5%	100%	$0.01	3	3
Idaho	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	6,404	20	$14,290	2.5%	100%	$0.01	2	2
Idaho	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	14,835	15	$2,145	45%	100%	$0.02	6	6
Idaho	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	37,914	15	$4,315	20%	100%	$0.01	7	7
Idaho	Chemical Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	13,928	15	$313	2.5%	100%	$0.00	7	7
Idaho	Chemical Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	33,135	30	$12,489	4.0%	100%	$0.01	5	5
Idaho	Chemical Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	18,788	10	$5,979	33%	100%	$0.01	38	38
Idaho	Chemical Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	28,435	10	$779	73%	100%	$0.00	20	20
Idaho	Chemical Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	69,863	15	$39,382	0.0%	100%	$0.26	0.00	0.00
Idaho	Chemical Mfg	Lighting	Facility Energy Management			Per Industry	Existing	7,722	2	$161	75%	100%	$0.01	5	5
Idaho	Chemical Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	23,537	20	$33,801	0.0%	100%	$3.56	0.00	0.00
Idaho	Chemical Mfg	Lighting	LED (High Bay)			Per Industry	Existing	77,543	20	$57,220	2.1%	100%	$1.66	1	1
Idaho	Chemical Mfg	Lighting	Lighting Controls			Per Industry	Existing	77,264	10	$9,900	28%	100%	$0.02	21	21
Idaho	Chemical Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	87,169	15	$60,462	40%	100%	$0.34	34	34
Idaho	Chemical Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	48,817	15	$1,794	0.0%	100%	$0.22	0.00	0.00
Idaho	Chemical Mfg	Lighting	Screw Base CFL			Per Industry	Existing	36,339	4	$6,955	10%	100%	$-0.00	34	34
Idaho	Chemical Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	94,332	1	$5,477	0.0%	100%	$0.00	0.00	0.00
Idaho	Chemical Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	81,154	1	$4,808	0.0%	100%	$-0.01	0.00	0.00
Idaho	Chemical Mfg	Lighting	Screw Base LED			Per Industry	Existing	39,109	12	$56,954	1.8%	100%	$0.02	6	6
Idaho	Chemical Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	26,299	13	$72,153	11%	100%	$0.50	14	14
Idaho	Chemical Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	2,107	13	$80,376	34%	100%	$0.10	34	34
Idaho	Chemical Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	78,794	13	$74,255	0.0%	100%	$0.13	0.00	0.00
Idaho	Chemical Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	5,631	13	$6,093	0.0%	100%	$0.13	0.00	0.00
Idaho	Chemical Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	27,671	2	$579	75%	100%	$0.01	20	20
Idaho	Chemical Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	22,302	15	$9,709	74%	100%	$0.05	16	16
Idaho	Chemical Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	52,194	10	$5,406	33%	100%	$0.02	17	17
Idaho	Chemical Mfg	Motors Other	Motors Other			Per Industry	Existing	11,925	15	$217	89%	100%	$0.00	10	10
Idaho	Chemical Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	8,319	10	$1,898	6.7%	100%	$0.03	0.54	0.54

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Chemical Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	15,475	11.2	$5,579	4.6%	100%	$0.05	0.70	0.70
Idaho	Chemical Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	8,226	8	$1,193	3.9%	100%	$0.03	0.31	0.31
Idaho	Chemical Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	8,377	8	$852	3.9%	100%	$0.02	0.32	0.32
Idaho	Chemical Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	9,029	9	$2,754	7.0%	100%	$0.05	0.61	0.61
Idaho	Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	12,726	12	$24,115	10%	100%	$0.03	11	11
Idaho	Chemical Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	16,823	10	$3,599	21%	100%	$0.03	3	3
Idaho	Chemical Mfg	Other	Bldg Improvements			Per Industry	Existing	34,461	15	$4,506	35%	100%	$0.02	11	11
Idaho	Chemical Mfg	Other	Facility Energy Management			Per Industry	Existing	3,110	2	$65	75%	100%	$0.01	2	2
Idaho	Chemical Mfg	Other	Transformers			Per Industry	Existing	2,702	30	$539	20%	100%	$0.02	0.53	0.53
Idaho	Chemical Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	48,538	10	$12,817	28%	100%	$0.03	68	68
Idaho	Chemical Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	28,708	2	$600	16%	100%	$0.01	4	4
Idaho	Chemical Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	17,111	15	$5,877	81%	100%	$0.04	13	13
Idaho	Chemical Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	90,212	10	$9,337	59%	100%	$0.00	168	168
Idaho	Chemical Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	28,691	10	$17,696	38%	100%	$0.09	10	10
Idaho	Chemical Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	22,298	10	$10,252	38%	100%	$0.07	8	8
Idaho	Chemical Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	92,623	10	$29,002	18%	100%	$0.05	16	16
Idaho	Chemical Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	25,958	10	$3,583	18%	100%	$0.02	4	4
Idaho	Chemical Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	69,558	10	$53,495	18%	100%	$0.06	66	66
Idaho	Chemical Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	28,691	10	$8,928	18%	100%	$0.05	5	5
Idaho	Chemical Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	31,022	1	$2,147	10%	100%	$0.00	32	32
Idaho	Chemical Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	22,667	10	$9,989	28%	100%	$0.01	34	34
Idaho	Chemical Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	74,480	20	$12,058	30%	100%	$0.02	21	21
Idaho	Chemical Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	47,978	20	$38,839	8.0%	100%	$0.03	11	11
Idaho	Chemical Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	15,235	2	$318	75%	100%	$0.01	11	11
Idaho	Chemical Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	49,653	10	$43,695	34%	100%	$0.13	16	16
Idaho	Chemical Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	93,299	10	$4,701	33%	100%	$0.01	30	30
Idaho	Chemical Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	71,587	2	$2,205	63%	100%	$0.02	44	44
Idaho	Chemical Mfg	Process Other	Facility Energy Management			Per Industry	Existing	236	2	$4	75%	100%	$0.01	0.17	0.17
Idaho	Chemical Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	50,570	10	$8,017	34%	100%	$0.02	16	16
Idaho	Chemical Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	56,618	3	$3,499	85%	100%	$0.02	47	47
Idaho	Chemical Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	4,851	10	$1,037	21%	100%	$0.03	1	1

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Chemical Mfg	Pumps	Facility Energy Management			Per Industry	Existing	26,946	2	$563	59%	100%	$0.01	15	15
Idaho	Chemical Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	21,718	15	$9,455	76%	100%	$0.05	16	16
Idaho	Chemical Mfg	Pumps	Motor rewinds			Per Industry	Existing	8,705	9	$2,081	5.4%	100%	$0.04	0.45	0.45
Idaho	Chemical Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	92,724	12	$36,590	34%	100%	$0.05	97	97
Idaho	Chemical Mfg	Pumps	Pump System Optimization			Per Industry	Existing	77,060	12	$45,512	16%	100%	$-0.03	27	27
Idaho	Chemical Mfg	Pumps	Synchronous Belts			Per Industry	Existing	16,382	10	$3,504	21%	100%	$0.03	3	3
Idaho	Electronic Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	1,268	2	$26	27%	100%	$0.01	0.34	0.34
Idaho	Electronic Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	1,022	15	$445	74%	100%	$0.05	0.74	0.74
Idaho	Electronic Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	4,227	10	$382	33%	100%	$0.04	1	1
Idaho	Electronic Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	7,179	10	$1,142	15%	100%	$0.02	1	1
Idaho	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	9,692	15	$1,425	14%	100%	$0.02	1	1
Idaho	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	30,935	15	$2,901	5.0%	100%	$0.01	1	1
Idaho	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	69,469	20	$9,330	1.0%	100%	$0.01	0.68	0.68
Idaho	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	23,156	20	$3,110	6.5%	100%	$0.01	1	1
Idaho	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	51,656	20	$6,937	2.5%	100%	$0.01	1	1
Idaho	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	7,202	15	$1,041	45%	100%	$0.02	3	3
Idaho	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	18,406	15	$2,095	20%	100%	$0.01	3	3
Idaho	Electronic Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	52,405	15	$152	2.5%	100%	$0.00	3	3
Idaho	Electronic Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	64,634	30	$6,063	4.0%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	57,669	10	$2,902	39%	100%	$0.01	22	22
Idaho	Electronic Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	13,804	10	$378	86%	100%	$0.00	11	11
Idaho	Electronic Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	34,833	15	$69,495	0.0%	100%	$0.26	0.00	0.00

Table C-2.3. Industrial Measure Details

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Idaho	Electronic Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	3,850	2	$80	75%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	11,735	20	$15,727	0.0%	100%	$3.56	0.00	0.00
Idaho	Electronic Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	38,662	20	$26,840	2.1%	100%	$1.66	0.80	0.80
Idaho	Electronic Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	38,523	10	$4,936	28%	100%	$0.02	10	10
Idaho	Electronic Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	43,462	15	$29,864	40%	100%	$0.34	17	17
Idaho	Electronic Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	24,339	15	$50,754	0.0%	100%	$0.22	0.00	0.00
Idaho	Electronic Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	67,696	4	$3,467	10%	100%	$-0.00	17	17
Idaho	Electronic Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	46,751	1	$2,730	0.0%	100%	$0.00	0.00	0.00
Idaho	Electronic Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	40,462	1	$2,397	0.0%	100%	$-0.01	0.00	0.00
Idaho	Electronic Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	69,077	12	$28,397	1.8%	100%	$0.02	3	3
Idaho	Electronic Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	62,972	13	$35,412	11%	100%	$0.50	7	7
Idaho	Electronic Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	50,909	13	$40,074	34%	100%	$0.10	16	16
Idaho	Electronic Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	39,286	13	$37,023	0.0%	100%	$0.13	0.00	0.00
Idaho	Electronic Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	52,666	13	$52,897	0.0%	100%	$0.13	0.00	0.00
Idaho	Electronic Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	2,845	2	$59	75%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	2,293	15	$998	75%	100%	$0.05	1	1
Idaho	Electronic Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	5,367	10	$556	34%	100%	$0.02	1	1
Idaho	Electronic Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	1,226	15	$22	90%	100%	$0.00	1	1
Idaho	Electronic Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	855	10	$195	6.7%	100%	$0.03	0.05	0.05
Idaho	Electronic Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	1,591	11.2	$573	4.7%	100%	$0.05	0.07	0.07
Idaho	Electronic Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	846	8	$122	4.0%	100%	$0.03	0.03	0.03

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Idaho	Electronic Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	861	8	$87	4.0%	100%	$0.02	0.03	0.03
Idaho	Electronic Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	928	9	$283	7.0%	100%	$0.05	0.06	0.06
Idaho	Electronic Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	11,593	12	$2,480	10%	100%	$0.03	1	1
Idaho	Electronic Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	25,020	15	$3,271	35%	100%	$0.02	8	8
Idaho	Electronic Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	2,257	2	$47	75%	100%	$0.01	1	1
Idaho	Electronic Equipment Mfg	Other	Transformers			Per Industry	Existing	1,962	30	$391	20%	100%	$0.02	0.38	0.38
Idaho	Electronic Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	25,560	10	$1,318	26%	100%	$0.03	6	6
Idaho	Electronic Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	2,952	2	$61	72%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	1,759	15	$604	74%	100%	$0.04	1	1
Idaho	Electronic Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	29,846	10	$960	3.2%	100%	$0.00	0.92	0.92
Idaho	Electronic Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	2,950	10	$1,819	35%	100%	$0.09	1	1
Idaho	Electronic Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	2,293	10	$1,054	35%	100%	$0.07	0.78	0.78
Idaho	Electronic Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	9,525	10	$2,982	17%	100%	$0.05	1	1
Idaho	Electronic Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	2,669	10	$368	17%	100%	$0.02	0.43	0.43
Idaho	Electronic Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	38,006	10	$15,785	17%	100%	$0.06	6	6
Idaho	Electronic Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	2,950	10	$918	17%	100%	$0.05	0.48	0.48
Idaho	Electronic Equipment Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	28,551	1	$185	10%	100%	$0.00	2	2
Idaho	Electronic Equipment Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	10,580	10	$861	28%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	6,424	20	$1,040	30%	100%	$0.02	1	1
Idaho	Electronic Equipment Mfg	Process Cool	Elec Chip Fab: Solidstate Chiller			Per Industry	Existing	64,240	10	$32,667	20%	100%	$-0.05	12	12
Idaho	Electronic Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	12,763	20	$3,349	8.0%	100%	$0.03	1	1

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Idaho	Electronic Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	1,314	2	$27	75%	100%	$0.01	0.96	0.96
Idaho	Electronic Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	4,282	10	$3,768	34%	100%	$0.13	1	1
Idaho	Electronic Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	86,768	10	$4,372	36%	100%	$0.01	30	30
Idaho	Electronic Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	66,576	2	$2,051	69%	100%	$0.02	45	45
Idaho	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust			Per Industry	Existing	488	10	$91	80%	100%	$0.03	0.38	0.38
Idaho	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector			Per Industry	Existing	9,765	10	$4,397	35%	100%	$-0.07	3	3
Idaho	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure			Per Industry	Existing	976	10	$0.00	50%	100%	$-0.01	0.48	0.48
Idaho	Electronic Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	179	2	$3	75%	100%	$0.01	0.13	0.13
Idaho	Electronic Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	5,200	10	$824	34%	100%	$0.02	1	1
Idaho	Electronic Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	5,822	3	$359	85%	100%	$0.02	4	4
Idaho	Electronic Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	2,771	2	$58	75%	100%	$0.01	2	2
Idaho	Electronic Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	2,233	15	$972	73%	100%	$0.05	1	1
Idaho	Electronic Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	895	9	$214	5.2%	100%	$0.04	0.04	0.04
Idaho	Food Mfg	Fans	Facility Energy Management			Per Industry	Existing	14,496	2	$303	3.7%	100%	$0.01	0.53	0.53
Idaho	Food Mfg	Fans	Fan System Optimization			Per Industry	Existing	60,541	10	$12,359	30%	100%	$0.03	17	17
Idaho	Food Mfg	Fans	High Efficiency Motors			Per Industry	Existing	11,683	15	$5,086	75%	100%	$0.05	8	8
Idaho	Food Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	48,316	10	$4,366	34%	100%	$0.04	16	16
Idaho	Food Mfg	Fans	Properly Sized Fans			Per Industry	Existing	82,054	10	$13,053	15%	100%	$0.02	12	12
Idaho	Food Mfg	Fans	Synchronous Belts			Per Industry	Existing	8,813	10	$1,885	21%	100%	$0.03	1	1
Idaho	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	50,891	15	$7,483	14%	100%	$0.02	6	6
Idaho	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	62,426	15	$15,236	5.0%	100%	$0.01	7	7
Idaho	Food Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	64,744	20	$48,987	1.0%	100%	$0.01	3	3
Idaho	Food Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	21,581	20	$16,329	6.5%	100%	$0.01	7	7
Idaho	Food Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	71,220	20	$36,426	2.5%	100%	$0.01	6	6

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	37,816	15	$5,468	45%	100%	$0.02	16	16
Idaho	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	96,641	15	$11,000	20%	100%	$0.01	19	19
Idaho	Food Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	192	15	$800	2.5%	100%	$0.00	19	19
Idaho	Food Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	39,358	30	$31,834	4.0%	100%	$0.01	13	13
Idaho	Food Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	2,787	10	$15,240	33%	100%	$0.01	97	97
Idaho	Food Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	72,481	10	$1,987	73%	100%	$0.00	51	51
Idaho	Food Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	31,331	15	$61,527	0.0%	100%	$0.26	0.00	0.00
Idaho	Food Mfg	Lighting	Facility Energy Management			Per Industry	Existing	25,570	2	$535	75%	100%	$0.01	18	18
Idaho	Food Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	77,938	20	$60,899	0.0%	100%	$3.56	0.00	0.00
Idaho	Food Mfg	Lighting	LED (High Bay)			Per Industry	Existing	56,763	20	$62,932	2.1%	100%	$1.66	5	5
Idaho	Food Mfg	Lighting	Lighting Controls			Per Industry	Existing	55,839	10	$32,782	28%	100%	$0.02	70	70
Idaho	Food Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	88,638	15	$62,446	40%	100%	$0.34	113	113
Idaho	Food Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	61,644	15	$37,064	0.0%	100%	$0.22	0.00	0.00
Idaho	Food Mfg	Lighting	Screw Base CFL			Per Industry	Existing	13,694	4	$23,031	10%	100%	$-0.00	114	114
Idaho	Food Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	74,598	1	$18,135	0.0%	100%	$0.00	0.00	0.00
Idaho	Food Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	68,719	1	$15,923	0.0%	100%	$-0.01	0.00	0.00
Idaho	Food Mfg	Lighting	Screw Base LED			Per Industry	Existing	22,866	12	$88,589	1.8%	100%	$0.02	20	20
Idaho	Food Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	18,206	13	$63,404	11%	100%	$0.50	46	46
Idaho	Food Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	38,099	13	$66,143	34%	100%	$0.10	112	112
Idaho	Food Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	60,906	13	$45,874	0.0%	100%	$0.13	0.00	0.00
Idaho	Food Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	49,767	13	$51,300	0.0%	100%	$0.13	0.00	0.00
Idaho	Food Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	75,380	2	$1,577	75%	100%	$0.01	55	55
Idaho	Food Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	60,755	15	$26,450	73%	100%	$0.05	43	43
Idaho	Food Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	42,184	10	$14,727	33%	100%	$0.02	45	45
Idaho	Food Mfg	Motors Other	Motors Other			Per Industry	Existing	32,485	15	$592	88%	100%	$0.00	28	28
Idaho	Food Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	22,662	10	$5,171	6.6%	100%	$0.03	1	1
Idaho	Food Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	42,156	11.2	$15,198	4.6%	100%	$0.05	1	1
Idaho	Food Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	22,409	8	$3,250	3.9%	100%	$0.03	0.85	0.85
Idaho	Food Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	22,821	8	$2,321	3.9%	100%	$0.02	0.87	0.87

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Food Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	24,598	9	$7,502	6.9%	100%	$0.05	1	1
Idaho	Food Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	7,080	12	$65,693	10%	100%	$0.03	30	30
Idaho	Food Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	45,828	10	$9,804	20%	100%	$0.03	9	9
Idaho	Food Mfg	Other	Bldg Improvements			Per Industry	Existing	7,882	15	$40,259	35%	100%	$0.02	105	105
Idaho	Food Mfg	Other	Facility Energy Management			Per Industry	Existing	27,785	2	$581	75%	100%	$0.01	20	20
Idaho	Food Mfg	Other	Transformers			Per Industry	Existing	24,147	30	$4,821	20%	100%	$0.02	4	4
Idaho	Food Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	63,796	10	$6,433	17%	100%	$0.03	26	26
Idaho	Food Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	43,247	10	$26,273	29%	100%	$-0.01	69	69
Idaho	Food Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	14,882	2	$311	43%	100%	$0.01	6	6
Idaho	Food Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	8,871	15	$3,046	74%	100%	$0.04	6	6
Idaho	Food Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	50,452	10	$4,840	3.2%	100%	$0.00	4	4
Idaho	Food Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	14,874	10	$9,174	35%	100%	$0.09	5	5
Idaho	Food Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	11,559	10	$5,315	35%	100%	$0.07	3	3
Idaho	Food Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	48,017	10	$15,035	17%	100%	$0.05	7	7
Idaho	Food Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	13,457	10	$1,857	17%	100%	$0.02	2	2
Idaho	Food Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	91,586	10	$79,575	17%	100%	$0.06	31	31
Idaho	Food Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	14,874	10	$4,628	17%	100%	$0.05	2	2
Idaho	Food Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	36,293	20	$45,744	8.3%	100%	$0.03	76	76
Idaho	Food Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	96,400	2	$2,017	75%	100%	$0.01	71	71
Idaho	Food Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	14,168	10	$76,468	35%	100%	$0.13	108	108
Idaho	Food Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	84,368	10	$9,291	34%	100%	$0.01	61	61
Idaho	Food Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	41,464	2	$4,359	65%	100%	$0.02	90	90
Idaho	Food Mfg	Process Other	Facility Energy Management			Per Industry	Existing	990	2	$20	75%	100%	$0.01	0.73	0.73
Idaho	Food Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	60,103	10	$57,089	34%	100%	$0.02	120	120
Idaho	Food Mfg	Process Refrig	Cold Storage Retrofit			Per Industry	Existing	9,756	10	$85,633	39%	100%	$0.03	195	195
Idaho	Food Mfg	Process Refrig	Cold Storage Tuneup			Per Industry	Existing	81,873	3	$20,933	66%	100%	$0.02	312	312
Idaho	Food Mfg	Process Refrig	Food: Cooling and Storage			Per Industry	Existing	62,982	10	$38,894	15%	100%	$0.05	68	68
Idaho	Food Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	3,164	3	$24,920	3.0%	100%	$0.02	11	11
Idaho	Food Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	34,547	10	$7,390	21%	100%	$0.03	7	7
Idaho	Food Mfg	Pumps	Facility Energy Management			Per Industry	Existing	31,698	2	$663	60%	100%	$0.01	18	18
Idaho	Food Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	25,548	15	$11,122	74%	100%	$0.05	18	18
Idaho	Food Mfg	Pumps	Motor rewinds			Per Industry	Existing	10,240	9	$2,448	5.2%	100%	$0.04	0.52	0.52

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Food Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	44,350	12	$43,043	33%	100%	$0.05	111	111
Idaho	Food Mfg	Pumps	Pump System Optimization			Per Industry	Existing	8,287	12	$53,538	15%	100%	$-0.03	31	31
Idaho	Food Mfg	Pumps	Synchronous Belts			Per Industry	Existing	19,271	10	$4,122	21%	100%	$0.03	3	3
Idaho	Industrial Machinery	Fans	Facility Energy Management			Per Industry	Existing	23,731	2	$496	6.6%	100%	$0.01	1	1
Idaho	Industrial Machinery	Fans	Fan Equipment Upgrade			Per Industry	Existing	51,152	10	$38,670	23%	100%	$0.04	102	102
Idaho	Industrial Machinery	Fans	Fan System Optimization			Per Industry	Existing	99,110	10	$20,234	30%	100%	$0.03	29	29
Idaho	Industrial Machinery	Fans	High Efficiency Motors			Per Industry	Existing	19,127	15	$8,327	76%	100%	$0.05	14	14
Idaho	Industrial Machinery	Fans	Improved Controls - Fans			Per Industry	Existing	79,097	10	$7,148	34%	100%	$0.04	26	26
Idaho	Industrial Machinery	Fans	Properly Sized Fans			Per Industry	Existing	34,328	10	$21,369	15%	100%	$0.02	20	20
Idaho	Industrial Machinery	Fans	Synchronous Belts			Per Industry	Existing	14,427	10	$3,086	21%	100%	$0.03	3	3
Idaho	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	25,524	15	$18,457	14%	100%	$0.02	16	16
Idaho	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	631	15	$37,581	5.0%	100%	$0.01	19	19
Idaho	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	99,655	20	$20,828	1.0%	100%	$0.01	8	8
Idaho	Industrial Machinery	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	99,885	20	$40,276	6.5%	100%	$0.01	19	19
Idaho	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	68,974	20	$89,847	2.5%	100%	$0.01	16	16
Idaho	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	93,275	15	$13,487	45%	100%	$0.02	41	41
Idaho	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	38,370	15	$27,134	20%	100%	$0.01	46	46
Idaho	Industrial Machinery	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	73,706	15	$1,973	2.5%	100%	$0.00	48	48
Idaho	Industrial Machinery	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	37,040	30	$78,519	4.0%	100%	$0.01	32	32
Idaho	Industrial Machinery	Hvac	Improved Controls - HVAC			Per Industry	Existing	46,837	10	$37,591	33%	100%	$0.01	245	245
Idaho	Industrial Machinery	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	78,777	10	$4,902	74%	100%	$0.00	130	130
Idaho	Industrial Machinery	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	43,052	15	$83,928	0.0%	100%	$0.26	0.00	0.00
Idaho	Industrial Machinery	Lighting	Facility Energy Management			Per Industry	Existing	48,973	2	$1,025	75%	100%	$0.01	36	36
Idaho	Industrial Machinery	Lighting	Induction (High Bay)			Per Industry	Existing	49,269	20	$87,745	0.0%	100%	$3.56	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Industrial Machinery	Lighting	LED (High Bay)			Per Industry	Existing	91,759	20	$72,954	2.1%	100%	$1.66	10	10
Idaho	Industrial Machinery	Lighting	Lighting Controls			Per Industry	Existing	89,990	10	$62,786	28%	100%	$0.02	135	135
Idaho	Industrial Machinery	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	52,807	15	$51,779	40%	100%	$0.34	218	218
Idaho	Industrial Machinery	Lighting	Metal Halide (High Bay)			Per Industry	Existing	9,585	15	$45,553	0.0%	100%	$0.22	0.00	0.00
Idaho	Industrial Machinery	Lighting	Screw Base CFL			Per Industry	Existing	32,975	4	$44,109	10%	100%	$-0.00	219	219
Idaho	Industrial Machinery	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	66,575	1	$34,734	0.0%	100%	$0.00	0.00	0.00
Idaho	Industrial Machinery	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	14,657	1	$30,496	0.0%	100%	$-0.01	0.00	0.00
Idaho	Industrial Machinery	Lighting	Screw Base LED			Per Industry	Existing	50,542	12	$61,192	1.8%	100%	$0.02	39	39
Idaho	Industrial Machinery	Lighting	T5 Linear Florescent			Per Industry	Existing	959	13	$94,272	11%	100%	$0.50	89	89
Idaho	Industrial Machinery	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	47,537	13	$9,723	34%	100%	$0.10	216	216
Idaho	Industrial Machinery	Lighting	T8 Linear Florescent			Per Industry	Existing	99,695	13	$70,906	0.0%	100%	$0.13	0.00	0.00
Idaho	Industrial Machinery	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	69,883	13	$72,819	0.0%	100%	$0.13	0.00	0.00
Idaho	Industrial Machinery	Motors Other	Facility Energy Management			Per Industry	Existing	67,556	2	$1,413	75%	100%	$0.01	49	49
Idaho	Industrial Machinery	Motors Other	High Efficiency Motors			Per Industry	Existing	54,449	15	$23,705	75%	100%	$0.05	40	40
Idaho	Industrial Machinery	Motors Other	Improved Controls - Motors			Per Industry	Existing	27,427	10	$13,199	34%	100%	$0.02	42	42
Idaho	Industrial Machinery	Motors Other	Motors Other			Per Industry	Existing	29,114	15	$530	90%	100%	$0.00	25	25
Idaho	Industrial Machinery	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	20,310	10	$4,634	6.7%	100%	$0.03	1	1
Idaho	Industrial Machinery	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	37,781	11.2	$13,621	4.7%	100%	$0.05	1	1
Idaho	Industrial Machinery	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	20,083	8	$2,913	4.0%	100%	$0.03	0.78	0.78
Idaho	Industrial Machinery	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	20,453	8	$2,080	4.0%	100%	$0.02	0.80	0.80
Idaho	Industrial Machinery	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	22,045	9	$6,723	7.1%	100%	$0.05	1	1
Idaho	Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	75,207	12	$58,875	10%	100%	$0.03	28	28
Idaho	Industrial Machinery	Motors Other	Synchronous Belts			Per Industry	Existing	41,071	10	$8,786	21%	100%	$0.03	8	8
Idaho	Industrial Machinery	Other	Bldg Improvements			Per Industry	Existing	78,946	15	$36,476	35%	100%	$0.02	96	96
Idaho	Industrial Machinery	Other	Facility Energy Management			Per Industry	Existing	25,173	2	$526	75%	100%	$0.01	18	18
Idaho	Industrial Machinery	Other	Transformers			Per Industry	Existing	21,877	30	$4,368	20%	100%	$0.02	4	4
Idaho	Industrial Machinery	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	36,947	10	$12,219	26%	100%	$0.03	60	60
Idaho	Industrial Machinery	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	1,216	10	$11,830	17%	100%	$0.03	50	50
Idaho	Industrial Machinery	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	47,324	10	$48,316	30%	100%	$-0.01	130	130
Idaho	Industrial Machinery	Process Aircomp	Facility Energy Management			Per Industry	Existing	27,369	2	$572	42%	100%	$0.01	11	11

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Industrial Machinery	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	16,313	15	$5,602	75%	100%	$0.04	12	12
Idaho	Industrial Machinery	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	76,677	10	$8,902	3.2%	100%	$0.00	8	8
Idaho	Industrial Machinery	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	27,353	10	$16,871	36%	100%	$0.09	9	9
Idaho	Industrial Machinery	Process Aircomp	Outside Air Intake			Per Industry	Existing	21,258	10	$9,774	36%	100%	$0.07	7	7
Idaho	Industrial Machinery	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	88,303	10	$27,650	17%	100%	$0.05	14	14
Idaho	Industrial Machinery	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	24,748	10	$3,416	17%	100%	$0.02	4	4
Idaho	Industrial Machinery	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	52,322	10	$46,336	17%	100%	$0.06	58	58
Idaho	Industrial Machinery	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	27,353	10	$8,512	17%	100%	$0.05	4	4
Idaho	Industrial Machinery	Process Cool	Equipment: Chillers			Per Industry	Existing	13,257	20	$29,726	8.0%	100%	$0.03	8	8
Idaho	Industrial Machinery	Process Cool	Facility Energy Management			Per Industry	Existing	11,661	2	$244	75%	100%	$0.01	8	8
Idaho	Industrial Machinery	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	38,003	10	$33,442	34%	100%	$0.13	12	12
Idaho	Industrial Machinery	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	14,214	10	$20,874	36%	100%	$0.01	147	147
Idaho	Industrial Machinery	Process Heat	Process Heat O&M			Per Industry	Existing	17,822	2	$9,793	70%	100%	$0.02	218	218
Idaho	Industrial Machinery	Process Other	Facility Energy Management			Per Industry	Existing	1,938	2	$40	75%	100%	$0.01	1	1
Idaho	Industrial Machinery	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	73,546	10	$11,659	34%	100%	$0.02	24	24
Idaho	Industrial Machinery	Process Refrig	Optimization of operating parameters			Per Industry	Existing	82,341	3	$5,089	85%	100%	$0.02	68	68
Idaho	Industrial Machinery	Process Refrig	Synchronous Belts			Per Industry	Existing	7,055	10	$1,509	21%	100%	$0.03	1	1
Idaho	Industrial Machinery	Pumps	Facility Energy Management			Per Industry	Existing	42,959	2	$899	75%	100%	$0.01	31	31
Idaho	Industrial Machinery	Pumps	High Efficiency Motors			Per Industry	Existing	34,624	15	$15,074	76%	100%	$0.05	25	25
Idaho	Industrial Machinery	Pumps	Motor rewinds			Per Industry	Existing	13,878	9	$3,318	5.3%	100%	$0.04	0.72	0.72
Idaho	Industrial Machinery	Pumps	Synchronous Belts			Per Industry	Existing	26,117	10	$5,587	21%	100%	$0.03	5	5
Idaho	Lumber Wood Products	Fans	Efficient Centrifugal Fan			Per Industry	Existing	59,056	10	$28,919	11%	100%	$0.03	16	16
Idaho	Lumber Wood Products	Fans	Facility Energy Management			Per Industry	Existing	14,641	2	$306	3.0%	100%	$0.01	0.43	0.43
Idaho	Lumber Wood Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	78,348	10	$23,858	23%	100%	$0.04	62	62
Idaho	Lumber Wood Products	Fans	Fan System Optimization			Per Industry	Existing	61,148	10	$12,483	30%	100%	$0.03	18	18
Idaho	Lumber Wood Products	Fans	High Efficiency Motors			Per Industry	Existing	11,800	15	$5,137	77%	100%	$0.05	8	8
Idaho	Lumber Wood Products	Fans	Improved Controls - Fans			Per Industry	Existing	48,800	10	$4,410	34%	100%	$0.04	16	16

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Lumber Wood Products	Fans	Properly Sized Fans			Per Industry	Existing	82,877	10	$13,184	15%	100%	$0.02	12	12
Idaho	Lumber Wood Products	Fans	Synchronous Belts			Per Industry	Existing	8,901	10	$1,904	21%	100%	$0.03	1	1
Idaho	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	19,128	15	$2,812	14%	100%	$0.02	2	2
Idaho	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	61,052	15	$5,727	5.0%	100%	$0.01	3	3
Idaho	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	37,099	20	$18,413	1.0%	100%	$0.01	1	1
Idaho	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	45,699	20	$6,137	6.5%	100%	$0.01	2	2
Idaho	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	1,945	20	$13,691	2.5%	100%	$0.01	2	2
Idaho	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	14,214	15	$2,055	45%	100%	$0.02	6	6
Idaho	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	36,325	15	$4,135	20%	100%	$0.01	7	7
Idaho	Lumber Wood Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	774	15	$300	2.5%	100%	$0.00	7	7
Idaho	Lumber Wood Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	27,557	30	$11,965	4.0%	100%	$0.01	5	5
Idaho	Lumber Wood Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	13,811	10	$5,728	33%	100%	$0.01	36	36
Idaho	Lumber Wood Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	27,244	10	$747	73%	100%	$0.00	19	19
Idaho	Lumber Wood Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	96,063	15	$91,655	0.0%	100%	$0.26	0.00	0.00
Idaho	Lumber Wood Products	Lighting	Facility Energy Management			Per Industry	Existing	10,618	2	$222	75%	100%	$0.01	7	7
Idaho	Lumber Wood Products	Lighting	Induction (High Bay)			Per Industry	Existing	32,365	20	$46,503	0.0%	100%	$3.56	0.00	0.00
Idaho	Lumber Wood Products	Lighting	LED (High Bay)			Per Industry	Existing	6,624	20	$28,717	2.1%	100%	$1.66	2	2
Idaho	Lumber Wood Products	Lighting	Lighting Controls			Per Industry	Existing	6,241	10	$13,613	28%	100%	$0.02	29	29
Idaho	Lumber Wood Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	19,861	15	$58,143	40%	100%	$0.34	47	47

Table C-2.3. Industrial Measure Details

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Idaho	Lumber Wood Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	67,125	15	$39,970	0.0%	100%	$0.22	0.00	0.00
Idaho	Lumber Wood Products	Lighting	Screw Base CFL			Per Industry	Existing	62,477	4	$9,564	10%	100%	$-0.00	47	47
Idaho	Lumber Wood Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	4,716	1	$7,531	0.0%	100%	$0.00	0.00	0.00
Idaho	Lumber Wood Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	11,589	1	$6,612	0.0%	100%	$-0.01	0.00	0.00
Idaho	Lumber Wood Products	Lighting	Screw Base LED			Per Industry	Existing	66,286	12	$78,314	1.8%	100%	$0.02	8	8
Idaho	Lumber Wood Products	Lighting	T5 Linear Florescent			Per Industry	Existing	73,666	13	$49,226	11%	100%	$0.50	19	19
Idaho	Lumber Wood Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	40,400	13	$10,519	34%	100%	$0.10	46	46
Idaho	Lumber Wood Products	Lighting	T8 Linear Florescent			Per Industry	Existing	8,345	13	$2,103	0.0%	100%	$0.13	0.00	0.00
Idaho	Lumber Wood Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	45,245	13	$45,882	0.0%	100%	$0.13	0.00	0.00
Idaho	Lumber Wood Products	Motors Other	Facility Energy Management			Per Industry	Existing	41,680	2	$872	75%	100%	$0.01	30	30
Idaho	Lumber Wood Products	Motors Other	High Efficiency Motors			Per Industry	Existing	33,593	15	$14,625	75%	100%	$0.05	24	24
Idaho	Lumber Wood Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	78,619	10	$8,143	34%	100%	$0.02	26	26
Idaho	Lumber Wood Products	Motors Other	Material Handling			Per Industry	Existing	13,413	10	$52,996	53%	100%	$0.07	59	59
Idaho	Lumber Wood Products	Motors Other	Material Handling VFD			Per Industry	Existing	23,975	10	$27,192	53%	100%	$0.05	221	221
Idaho	Lumber Wood Products	Motors Other	Motors Other			Per Industry	Existing	17,962	15	$327	90%	100%	$0.00	15	15
Idaho	Lumber Wood Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	12,530	10	$2,859	6.8%	100%	$0.03	0.83	0.83
Idaho	Lumber Wood Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	23,309	11.2	$8,404	4.7%	100%	$0.05	1	1
Idaho	Lumber Wood Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	12,390	8	$1,797	4.0%	100%	$0.03	0.48	0.48
Idaho	Lumber Wood Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	12,618	8	$1,283	4.0%	100%	$0.02	0.49	0.49
Idaho	Lumber Wood Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	13,601	9	$4,148	7.1%	100%	$0.05	0.94	0.94
Idaho	Lumber Wood Products	Motors Other	Panel: Hydraulic Press			Per Industry	Existing	33,903	10	$27,116	28%	100%	$0.03	174	174

Table C-2.3. Industrial Measure Details

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Idaho	Lumber Wood Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	69,795	12	$36,324	11%	100%	$0.03	17	17
Idaho	Lumber Wood Products	Motors Other	Synchronous Belts			Per Industry	Existing	25,340	10	$5,421	21%	100%	$0.03	5	5
Idaho	Lumber Wood Products	Motors Other	Wood: Replace Pneumatic Conveyor			Per Industry	Existing	56,543	10	$9,519	50%	100%	$-0.06	323	323
Idaho	Lumber Wood Products	Other	Bldg Improvements			Per Industry	Existing	28,052	15	$16,744	35%	100%	$0.02	44	44
Idaho	Lumber Wood Products	Other	Facility Energy Management			Per Industry	Existing	11,556	2	$241	75%	100%	$0.01	8	8
Idaho	Lumber Wood Products	Other	Transformers			Per Industry	Existing	10,043	30	$2,005	20%	100%	$0.02	1	1
Idaho	Lumber Wood Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	46,189	10	$7,539	27%	100%	$0.03	38	38
Idaho	Lumber Wood Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	85,842	10	$7,298	18%	100%	$0.03	32	32
Idaho	Lumber Wood Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	75,986	10	$29,809	31%	100%	$-0.01	83	83
Idaho	Lumber Wood Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	16,885	2	$353	41%	100%	$0.01	6	6
Idaho	Lumber Wood Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	10,065	15	$3,456	78%	100%	$0.04	7	7
Idaho	Lumber Wood Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	70,702	10	$5,492	3.3%	100%	$0.00	5	5
Idaho	Lumber Wood Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	16,876	10	$10,409	37%	100%	$0.09	6	6
Idaho	Lumber Wood Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	13,115	10	$6,030	37%	100%	$0.07	4	4
Idaho	Lumber Wood Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	54,480	10	$17,059	18%	100%	$0.05	9	9
Idaho	Lumber Wood Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	15,268	10	$2,107	18%	100%	$0.02	2	2
Idaho	Lumber Wood Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	17,373	10	$90,285	18%	100%	$0.06	37	37
Idaho	Lumber Wood Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	16,876	10	$5,251	18%	100%	$0.05	2	2
Idaho	Lumber Wood Products	Process Cool	Equipment: Chillers			Per Industry	Existing	9,107	20	$2,390	7.7%	100%	$0.03	0.68	0.68
Idaho	Lumber Wood Products	Process Cool	Facility Energy Management			Per Industry	Existing	937	2	$19	75%	100%	$0.01	0.69	0.69
Idaho	Lumber Wood Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	3,056	10	$2,689	32%	100%	$0.13	0.97	0.97

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Idaho	Lumber Wood Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	21,426	10	$6,119	33%	100%	$0.01	39	39
Idaho	Lumber Wood Products	Process Heat	Process Heat O&M			Per Industry	Existing	93,169	2	$2,870	63%	100%	$0.02	58	58
Idaho	Lumber Wood Products	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Lumber Wood Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	45,376	10	$7,193	34%	100%	$0.02	15	15
Idaho	Lumber Wood Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	50,802	3	$3,140	85%	100%	$0.02	42	42
Idaho	Lumber Wood Products	Process Refrig	Synchronous Belts			Per Industry	Existing	4,353	10	$931	21%	100%	$0.03	0.89	0.89
Idaho	Lumber Wood Products	Pumps	Facility Energy Management			Per Industry	Existing	26,504	2	$554	75%	100%	$0.01	19	19
Idaho	Lumber Wood Products	Pumps	High Efficiency Motors			Per Industry	Existing	21,362	15	$9,300	72%	100%	$0.05	15	15
Idaho	Lumber Wood Products	Pumps	Motor rewinds			Per Industry	Existing	8,562	9	$2,047	5.1%	100%	$0.04	0.42	0.42
Idaho	Lumber Wood Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	87,927	12	$35,990	32%	100%	$0.05	91	91
Idaho	Lumber Wood Products	Pumps	Pump System Optimization			Per Industry	Existing	74,159	12	$44,766	75%	100%	$-0.03	128	128
Idaho	Lumber Wood Products	Pumps	Synchronous Belts			Per Industry	Existing	16,113	10	$3,447	20%	100%	$0.03	3	3
Idaho	Metal Mfg	Fans	Facility Energy Management			Per Industry	Existing	1,463	2	$30	27%	100%	$0.01	0.39	0.39
Idaho	Metal Mfg	Fans	High Efficiency Motors			Per Industry	Existing	1,179	15	$513	73%	100%	$0.05	0.85	0.85
Idaho	Metal Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	4,878	10	$440	33%	100%	$0.04	1	1
Idaho	Metal Mfg	Fans	Properly Sized Fans			Per Industry	Existing	8,285	10	$1,318	15%	100%	$0.02	1	1
Idaho	Metal Mfg	Fans	Synchronous Belts			Per Industry	Existing	889	10	$190	21%	100%	$0.03	0.18	0.18
Idaho	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	2,083	15	$306	14%	100%	$0.02	0.27	0.27
Idaho	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	6,650	15	$623	5.0%	100%	$0.01	0.32	0.32
Idaho	Metal Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	14,934	20	$2,005	1.0%	100%	$0.01	0.14	0.14
Idaho	Metal Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	4,978	20	$668	6.5%	100%	$0.01	0.31	0.31
Idaho	Metal Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	11,105	20	$1,491	2.5%	100%	$0.01	0.27	0.27
Idaho	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,548	15	$223	45%	100%	$0.02	0.68	0.68

Table C-2.3. Industrial Measure Details

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Idaho	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	3,957	15	$450	20%	100%	$0.01	0.77	0.77
Idaho	Metal Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	32,764	15	$32	2.5%	100%	$0.00	0.80	0.80
Idaho	Metal Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	13,895	30	$1,303	4.0%	100%	$0.01	0.54	0.54
Idaho	Metal Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	12,397	10	$624	34%	100%	$0.01	4	4
Idaho	Metal Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	2,967	10	$81	75%	100%	$0.00	2	2
Idaho	Metal Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	7,919	15	$15,800	0.0%	100%	$0.26	0.00	0.00
Idaho	Metal Mfg	Lighting	Facility Energy Management			Per Industry	Existing	875	2	$18	75%	100%	$0.01	0.64	0.64
Idaho	Metal Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	2,668	20	$94,518	0.0%	100%	$3.56	0.00	0.00
Idaho	Metal Mfg	Lighting	LED (High Bay)			Per Industry	Existing	8,790	20	$42,517	2.1%	100%	$1.66	0.18	0.18
Idaho	Metal Mfg	Lighting	Lighting Controls			Per Industry	Existing	8,758	10	$1,122	28%	100%	$0.02	2	2
Idaho	Metal Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	9,881	15	$29,525	40%	100%	$0.34	3	3
Idaho	Metal Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	5,533	15	$11,539	0.0%	100%	$0.22	0.00	0.00
Idaho	Metal Mfg	Lighting	Screw Base CFL			Per Industry	Existing	38,127	4	$788	10%	100%	$-0.00	3	3
Idaho	Metal Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	33,365	1	$620	0.0%	100%	$0.00	0.00	0.00
Idaho	Metal Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	9,199	1	$545	0.0%	100%	$-0.01	0.00	0.00
Idaho	Metal Mfg	Lighting	Screw Base LED			Per Industry	Existing	38,441	12	$6,456	1.8%	100%	$0.02	0.69	0.69
Idaho	Metal Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	14,317	13	$53,522	11%	100%	$0.50	1	1
Idaho	Metal Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	11,574	13	$9,111	34%	100%	$0.10	3	3
Idaho	Metal Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	8,932	13	$8,417	0.0%	100%	$0.13	0.00	0.00
Idaho	Metal Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	11,974	13	$12,026	0.0%	100%	$0.13	0.00	0.00
Idaho	Metal Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	5,893	2	$123	75%	100%	$0.01	4	4
Idaho	Metal Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	4,750	15	$2,068	74%	100%	$0.05	3	3
Idaho	Metal Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	11,116	10	$1,151	33%	100%	$0.02	3	3
Idaho	Metal Mfg	Motors Other	Motors Other			Per Industry	Existing	2,539	15	$46	89%	100%	$0.00	2	2
Idaho	Metal Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,771	10	$404	6.7%	100%	$0.03	0.11	0.11
Idaho	Metal Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	3,295	11.2	$1,188	4.6%	100%	$0.05	0.15	0.15
Idaho	Metal Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	1,752	8	$254	3.9%	100%	$0.03	0.06	0.06
Idaho	Metal Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,784	8	$181	3.9%	100%	$0.02	0.06	0.06
Idaho	Metal Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	1,923	9	$586	7.0%	100%	$0.05	0.13	0.13

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Idaho	Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	24,008	12	$5,136	10%	100%	$0.03	2	2
Idaho	Metal Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	3,583	10	$766	21%	100%	$0.03	0.73	0.73
Idaho	Metal Mfg	Other	Bldg Improvements			Per Industry	Existing	4,341	15	$567	35%	100%	$0.02	1	1
Idaho	Metal Mfg	Other	Facility Energy Management			Per Industry	Existing	391	2	$8	75%	100%	$0.01	0.28	0.28
Idaho	Metal Mfg	Other	Transformers			Per Industry	Existing	340	30	$67	20%	100%	$0.02	0.06	0.06
Idaho	Metal Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	11,844	10	$610	25%	100%	$0.03	2	2
Idaho	Metal Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	15,057	10	$591	17%	100%	$0.03	2	2
Idaho	Metal Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	22,361	10	$2,415	29%	100%	$-0.01	6	6
Idaho	Metal Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,368	2	$28	43%	100%	$0.01	0.57	0.57
Idaho	Metal Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	815	15	$280	73%	100%	$0.04	0.58	0.58
Idaho	Metal Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	13,830	10	$445	3.1%	100%	$0.00	0.42	0.42
Idaho	Metal Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,367	10	$843	35%	100%	$0.09	0.46	0.46
Idaho	Metal Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	1,062	10	$488	35%	100%	$0.07	0.36	0.36
Idaho	Metal Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	4,414	10	$1,382	17%	100%	$0.05	0.71	0.71
Idaho	Metal Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	1,237	10	$170	17%	100%	$0.02	0.20	0.20
Idaho	Metal Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	17,612	10	$7,315	17%	100%	$0.06	2	2
Idaho	Metal Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,367	10	$425	17%	100%	$0.05	0.22	0.22
Idaho	Metal Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	2,366	20	$621	8.0%	100%	$0.03	0.18	0.18
Idaho	Metal Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	243	2	$5	75%	100%	$0.01	0.17	0.17
Idaho	Metal Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	794	10	$698	34%	100%	$0.13	0.26	0.26
Idaho	Metal Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	30,500	10	$6,576	35%	100%	$0.01	44	44
Idaho	Metal Mfg	Process Heat	Metal: New Arc Furnace			Per Industry	Existing	4,329	10	$18,865	7.3%	100%	$-2.02	14	14
Idaho	Metal Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	131	2	$3,085	67%	100%	$0.02	66	66
Idaho	Metal Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Metal Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Metal Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
Idaho	Metal Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Idaho	Metal Mfg	Pumps	Facility Energy Management			Per Industry	Existing	832	2	$17	75%	100%	$0.01	0.61	0.61
Idaho	Metal Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	670	15	$292	72%	100%	$0.05	0.47	0.47
Idaho	Metal Mfg	Pumps	Motor rewinds			Per Industry	Existing	268	9	$64	5.1%	100%	$0.04	0.01	0.01
Idaho	Metal Mfg	Pumps	Synchronous Belts			Per Industry	Existing	506	10	$108	20%	100%	$0.03	0.10	0.10
Idaho	Mining	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Mining	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	25%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Mining	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Mining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
Idaho	Miscellaneous Mfg	Fans	Facility Energy Management			Per Industry	Existing	21,442	2	$448	5.5%	100%	$0.01	1	1
Idaho	Miscellaneous Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	7,630	10	$34,939	23%	100%	$0.04	92	92
Idaho	Miscellaneous Mfg	Fans	Fan System Optimization			Per Industry	Existing	89,549	10	$18,282	30%	100%	$0.03	26	26
Idaho	Miscellaneous Mfg	Fans	High Efficiency Motors			Per Industry	Existing	17,281	15	$7,523	76%	100%	$0.05	12	12
Idaho	Miscellaneous Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	71,466	10	$6,458	34%	100%	$0.04	24	24
Idaho	Miscellaneous Mfg	Fans	Properly Sized Fans			Per Industry	Existing	21,370	10	$19,308	15%	100%	$0.02	18	18
Idaho	Miscellaneous Mfg	Fans	Synchronous Belts			Per Industry	Existing	13,035	10	$2,788	21%	100%	$0.03	2	2
Idaho	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	49,437	15	$21,973	14%	100%	$0.02	19	19
Idaho	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	76,954	15	$44,741	5.0%	100%	$0.01	23	23
Idaho	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	71,044	20	$43,847	1.0%	100%	$0.01	10	10
Idaho	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	57,014	20	$47,949	6.5%	100%	$0.01	22	22
Idaho	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	96,417	20	$6,963	2.5%	100%	$0.01	19	19
Idaho	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	11,044	15	$16,057	45%	100%	$0.02	49	49
Idaho	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	83,780	15	$32,303	20%	100%	$0.01	55	55

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Miscellaneous Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	49,706	15	$2,349	2.5%	100%	$0.00	57	57
Idaho	Miscellaneous Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	96,500	30	$93,478	4.0%	100%	$0.01	39	39
Idaho	Miscellaneous Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	89,113	10	$44,753	33%	100%	$0.01	292	292
Idaho	Miscellaneous Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	12,835	10	$5,836	74%	100%	$0.00	155	155
Idaho	Miscellaneous Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	8,159	15	$13,821	0.0%	100%	$0.26	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	Facility Energy Management			Per Industry	Existing	56,169	2	$1,175	75%	100%	$0.01	41	41
Idaho	Miscellaneous Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	71,204	20	$64,776	0.0%	100%	$3.56	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	LED (High Bay)			Per Industry	Existing	64,023	20	$44,574	2.1%	100%	$1.66	11	11
Idaho	Miscellaneous Mfg	Lighting	Lighting Controls			Per Industry	Existing	61,994	10	$72,012	28%	100%	$0.02	155	155
Idaho	Miscellaneous Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	34,042	15	$94,507	40%	100%	$0.34	250	250
Idaho	Miscellaneous Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	55,078	15	$40,417	0.0%	100%	$0.22	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	Screw Base CFL			Per Industry	Existing	46,414	4	$50,591	10%	100%	$-0.00	251	251
Idaho	Miscellaneous Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	40,867	1	$39,838	0.0%	100%	$0.00	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	90,286	1	$34,977	0.0%	100%	$-0.01	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	Screw Base LED			Per Industry	Existing	66,563	12	$14,269	1.8%	100%	$0.02	44	44
Idaho	Miscellaneous Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	18,659	13	$34,278	11%	100%	$0.50	102	102
Idaho	Miscellaneous Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	42,692	13	$84,627	34%	100%	$0.10	247	247
Idaho	Miscellaneous Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	73,125	13	$40,105	0.0%	100%	$0.13	0.00	0.00
Idaho	Miscellaneous Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	68,322	13	$71,689	0.0%	100%	$0.13	0.00	0.00
Idaho	Miscellaneous Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	86,328	2	$1,806	75%	100%	$0.01	63	63
Idaho	Miscellaneous Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	69,579	15	$30,292	75%	100%	$0.05	51	51
Idaho	Miscellaneous Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	62,835	10	$16,866	34%	100%	$0.02	53	53
Idaho	Miscellaneous Mfg	Motors Other	Motors Other			Per Industry	Existing	37,204	15	$678	90%	100%	$0.00	32	32
Idaho	Miscellaneous Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	25,953	10	$5,922	6.7%	100%	$0.03	1	1
Idaho	Miscellaneous Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	48,279	11.2	$17,406	4.7%	100%	$0.05	2	2
Idaho	Miscellaneous Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	25,664	8	$3,723	4.0%	100%	$0.03	1	1
Idaho	Miscellaneous Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	26,136	8	$2,658	4.0%	100%	$0.02	1	1

Table C-2.3. Industrial Measure Details

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Idaho	Miscellaneous Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	28,171	9	$8,592	7.1%	100%	$0.05	1	1
Idaho	Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	51,681	12	$75,235	10%	100%	$0.03	36	36
Idaho	Miscellaneous Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	52,484	10	$11,228	21%	100%	$0.03	10	10
Idaho	Miscellaneous Mfg	Other	Bldg Improvements			Per Industry	Existing	81,380	15	$23,717	35%	100%	$0.02	62	62
Idaho	Miscellaneous Mfg	Other	Facility Energy Management			Per Industry	Existing	16,368	2	$342	75%	100%	$0.01	12	12
Idaho	Miscellaneous Mfg	Other	Transformers			Per Industry	Existing	14,225	30	$2,840	20%	100%	$0.02	2	2
Idaho	Miscellaneous Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	73,501	10	$8,947	26%	100%	$0.03	44	44
Idaho	Miscellaneous Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	20,040	2	$419	72%	100%	$0.01	14	14
Idaho	Miscellaneous Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	11,945	15	$4,102	75%	100%	$0.04	8	8
Idaho	Miscellaneous Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	2,593	10	$6,518	3.2%	100%	$0.00	6	6
Idaho	Miscellaneous Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	20,029	10	$12,353	36%	100%	$0.09	7	7
Idaho	Miscellaneous Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	15,566	10	$7,157	36%	100%	$0.07	5	5
Idaho	Miscellaneous Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	64,659	10	$20,246	17%	100%	$0.05	10	10
Idaho	Miscellaneous Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	18,121	10	$2,501	17%	100%	$0.02	3	3
Idaho	Miscellaneous Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	57,983	10	$7,153	17%	100%	$0.06	43	43
Idaho	Miscellaneous Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	20,029	10	$6,233	17%	100%	$0.05	3	3
Idaho	Miscellaneous Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	23,592	20	$58,685	8.0%	100%	$0.03	17	17
Idaho	Miscellaneous Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	23,021	2	$481	75%	100%	$0.01	16	16
Idaho	Miscellaneous Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	75,025	10	$66,022	34%	100%	$0.13	24	24
Idaho	Miscellaneous Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	55,984	10	$28,018	36%	100%	$0.01	198	198
Idaho	Miscellaneous Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	26,601	2	$13,145	70%	100%	$0.02	292	292
Idaho	Miscellaneous Mfg	Process Other	Facility Energy Management			Per Industry	Existing	1,681	2	$35	75%	100%	$0.01	1	1
Idaho	Miscellaneous Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	888	10	$140	34%	100%	$0.02	0.29	0.29
Idaho	Miscellaneous Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	994	3	$61	85%	100%	$0.02	0.83	0.83
Idaho	Miscellaneous Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	85	10	$18	21%	100%	$0.03	0.01	0.01
Idaho	Miscellaneous Mfg	Pumps	Facility Energy Management			Per Industry	Existing	12,192	2	$255	60%	100%	$0.01	7	7
Idaho	Miscellaneous Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	9,826	15	$4,278	76%	100%	$0.05	7	7
Idaho	Miscellaneous Mfg	Pumps	Motor rewinds			Per Industry	Existing	3,938	9	$941	5.3%	100%	$0.04	0.20	0.20
Idaho	Miscellaneous Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	32,451	12	$16,556	34%	100%	$0.05	44	44
Idaho	Miscellaneous Mfg	Pumps	Pump System Optimization			Per Industry	Existing	80,116	12	$20,593	16%	100%	$-0.03	12	12

Table C-2.3. Industrial Measure Details

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Idaho	Miscellaneous Mfg	Pumps	Synchronous Belts			Per Industry	Existing	7,412	10	$1,585	21%	100%	$0.03	1	1
Idaho	Paper Mfg	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	8.5%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	12%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	14%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	24%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	61%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Paper: Premium Fan			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	12%	100%	.	0.00	0.00
Idaho	Paper Mfg	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	32%	100%	.	0.00	0.00
Idaho	Paper Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	72%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00

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Idaho	Paper Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	60%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	72%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	5.4%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	3.8%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	5.6%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Paper: Large Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Paper: Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Paper: Premium Control Large Material			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	8.4%	100%	.	0.00	0.00
Idaho	Paper Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Idaho	Paper Mfg	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
Idaho	Paper Mfg	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	50%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	59%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Paper Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	2.4%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	0.00	20	$0.00	8.0%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	0.00	2	$0.00	64%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Kraft: Efficient Agitator			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Kraft: Effluent Treatment System			Per Industry	Existing	0.00	10	$0.00	7.3%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Mech Pulp: Premium Process			Per Industry	Existing	0.00	5	$0.00	18%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement			Per Industry	Existing	0.00	1	$0.00	28%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Other	Paper: Efficient Pulp Screen			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	67%	100%	.	0.00	0.00
Idaho	Paper Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	62%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	4.4%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	0.00	12	$0.00	28%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	Pump System Optimization			Per Industry	Existing	0.00	12	$0.00	75%	100%	.	0.00	0.00
Idaho	Paper Mfg	Pumps	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Idaho	Petroleum Refining	Fans	Facility Energy Management			Per Industry	Existing	3,293	2	$68	3.0%	100%	$0.01	0.09	0.09
Idaho	Petroleum Refining	Fans	Fan System Optimization			Per Industry	Existing	13,754	10	$2,808	30%	100%	$0.03	4	4
Idaho	Petroleum Refining	Fans	High Efficiency Motors			Per Industry	Existing	2,654	15	$1,155	76%	100%	$0.05	1	1
Idaho	Petroleum Refining	Fans	Improved Controls - Fans			Per Industry	Existing	10,977	10	$992	34%	100%	$0.04	3	3

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Petroleum Refining	Fans	Properly Sized Fans			Per Industry	Existing	18,642	10	$2,965	15%	100%	$0.02	2	2
Idaho	Petroleum Refining	Fans	Synchronous Belts			Per Industry	Existing	2,002	10	$428	21%	100%	$0.03	0.41	0.41
Idaho	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,824	15	$268	14%	100%	$0.02	0.24	0.24
Idaho	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	5,824	15	$546	5.0%	100%	$0.01	0.28	0.28
Idaho	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	13,079	20	$1,756	1.0%	100%	$0.01	0.12	0.12
Idaho	Petroleum Refining	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	4,359	20	$585	6.5%	100%	$0.01	0.27	0.27
Idaho	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	9,725	20	$1,306	2.5%	100%	$0.01	0.23	0.23
Idaho	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,356	15	$196	45%	100%	$0.02	0.60	0.60
Idaho	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	3,465	15	$394	20%	100%	$0.01	0.68	0.68
Idaho	Petroleum Refining	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	28,693	15	$28	2.5%	100%	$0.00	0.70	0.70
Idaho	Petroleum Refining	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	12,168	30	$1,141	4.0%	100%	$0.01	0.47	0.47
Idaho	Petroleum Refining	Hvac	Improved Controls - HVAC			Per Industry	Existing	10,857	10	$546	33%	100%	$0.01	3	3
Idaho	Petroleum Refining	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	2,599	10	$71	73%	100%	$0.00	1	1
Idaho	Petroleum Refining	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	6,643	15	$13,254	0.0%	100%	$0.26	0.00	0.00
Idaho	Petroleum Refining	Lighting	Facility Energy Management			Per Industry	Existing	734	2	$15	75%	100%	$0.01	0.54	0.54
Idaho	Petroleum Refining	Lighting	Induction (High Bay)			Per Industry	Existing	2,238	20	$79,289	0.0%	100%	$3.56	0.00	0.00
Idaho	Petroleum Refining	Lighting	LED (High Bay)			Per Industry	Existing	7,373	20	$19,554	2.1%	100%	$1.66	0.15	0.15
Idaho	Petroleum Refining	Lighting	Lighting Controls			Per Industry	Existing	7,347	10	$941	28%	100%	$0.02	2	2
Idaho	Petroleum Refining	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	8,289	15	$24,768	40%	100%	$0.34	3	3
Idaho	Petroleum Refining	Lighting	Metal Halide (High Bay)			Per Industry	Existing	4,642	15	$9,680	0.0%	100%	$0.22	0.00	0.00
Idaho	Petroleum Refining	Lighting	Screw Base CFL			Per Industry	Existing	31,983	4	$661	10%	100%	$-0.00	3	3
Idaho	Petroleum Refining	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	27,989	1	$520	0.0%	100%	$0.00	0.00	0.00
Idaho	Petroleum Refining	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	7,717	1	$457	0.0%	100%	$-0.01	0.00	0.00

Table C-2.3. Industrial Measure Details

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Idaho	Petroleum Refining	Lighting	Screw Base LED			Per Industry	Existing	32,247	12	$5,416	1.8%	100%	$0.02	0.58	0.58
Idaho	Petroleum Refining	Lighting	T5 Linear Florescent			Per Industry	Existing	12,010	13	$44,899	11%	100%	$0.50	1	1
Idaho	Petroleum Refining	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	9,709	13	$7,643	34%	100%	$0.10	3	3
Idaho	Petroleum Refining	Lighting	T8 Linear Florescent			Per Industry	Existing	7,492	13	$7,061	0.0%	100%	$0.13	0.00	0.00
Idaho	Petroleum Refining	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	10,044	13	$10,088	0.0%	100%	$0.13	0.00	0.00
Idaho	Petroleum Refining	Motors Other	Facility Energy Management			Per Industry	Existing	9,375	2	$196	75%	100%	$0.01	6	6
Idaho	Petroleum Refining	Motors Other	High Efficiency Motors			Per Industry	Existing	7,556	15	$3,289	76%	100%	$0.05	5	5
Idaho	Petroleum Refining	Motors Other	Improved Controls - Motors			Per Industry	Existing	17,684	10	$1,831	34%	100%	$0.02	5	5
Idaho	Petroleum Refining	Motors Other	Motors Other			Per Industry	Existing	4,040	15	$73	91%	100%	$0.00	3	3
Idaho	Petroleum Refining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	2,818	10	$643	6.8%	100%	$0.03	0.18	0.18
Idaho	Petroleum Refining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	5,243	11.2	$1,890	4.8%	100%	$0.05	0.24	0.24
Idaho	Petroleum Refining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	2,787	8	$404	4.1%	100%	$0.03	0.11	0.11
Idaho	Petroleum Refining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	2,838	8	$288	4.1%	100%	$0.02	0.11	0.11
Idaho	Petroleum Refining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	3,059	9	$933	7.2%	100%	$0.05	0.21	0.21
Idaho	Petroleum Refining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	38,194	12	$8,170	11%	100%	$0.03	4	4
Idaho	Petroleum Refining	Motors Other	Synchronous Belts			Per Industry	Existing	5,700	10	$1,219	21%	100%	$0.03	1	1
Idaho	Petroleum Refining	Other	Bldg Improvements			Per Industry	Existing	3,745	15	$489	35%	100%	$0.02	1	1
Idaho	Petroleum Refining	Other	Facility Energy Management			Per Industry	Existing	338	2	$7	75%	100%	$0.01	0.24	0.24
Idaho	Petroleum Refining	Other	Transformers			Per Industry	Existing	293	30	$58	20%	100%	$0.02	0.05	0.05
Idaho	Petroleum Refining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	32,884	10	$1,695	27%	100%	$0.03	8	8
Idaho	Petroleum Refining	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	41,803	10	$1,641	18%	100%	$0.03	7	7
Idaho	Petroleum Refining	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	62,081	10	$6,705	31%	100%	$-0.01	18	18
Idaho	Petroleum Refining	Process Aircomp	Facility Energy Management			Per Industry	Existing	3,798	2	$79	41%	100%	$0.01	1	1
Idaho	Petroleum Refining	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	2,264	15	$777	77%	100%	$0.04	1	1
Idaho	Petroleum Refining	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	38,398	10	$1,235	3.3%	100%	$0.00	1	1
Idaho	Petroleum Refining	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	3,796	10	$2,341	35%	100%	$0.09	1	1
Idaho	Petroleum Refining	Process Aircomp	Outside Air Intake			Per Industry	Existing	2,950	10	$1,356	35%	100%	$0.07	1	1
Idaho	Petroleum Refining	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	12,255	10	$3,837	18%	100%	$0.05	2	2
Idaho	Petroleum Refining	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	3,434	10	$474	18%	100%	$0.02	0.59	0.59
Idaho	Petroleum Refining	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	48,896	10	$20,309	18%	100%	$0.06	8	8
Idaho	Petroleum Refining	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	3,796	10	$1,181	18%	100%	$0.05	0.65	0.65

Table C-2.3. Industrial Measure Details

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Idaho	Petroleum Refining	Process Cool	Equipment: Chillers			Per Industry	Existing	16,152	20	$4,239	8.0%	100%	$0.03	1	1
Idaho	Petroleum Refining	Process Cool	Facility Energy Management			Per Industry	Existing	1,663	2	$34	75%	100%	$0.01	1	1
Idaho	Petroleum Refining	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	5,419	10	$4,769	34%	100%	$0.13	1	1
Idaho	Petroleum Refining	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	27,423	10	$1,381	33%	100%	$0.01	8	8
Idaho	Petroleum Refining	Process Heat	Process Heat O&M			Per Industry	Existing	21,041	2	$648	63%	100%	$0.02	13	13
Idaho	Petroleum Refining	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Petroleum Refining	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	10,207	10	$1,618	34%	100%	$0.02	3	3
Idaho	Petroleum Refining	Process Refrig	Optimization of operating parameters			Per Industry	Existing	11,427	3	$706	85%	100%	$0.02	9	9
Idaho	Petroleum Refining	Process Refrig	Synchronous Belts			Per Industry	Existing	979	10	$209	21%	100%	$0.03	0.20	0.20
Idaho	Petroleum Refining	Pumps	Facility Energy Management			Per Industry	Existing	5,962	2	$124	75%	100%	$0.01	4	4
Idaho	Petroleum Refining	Pumps	High Efficiency Motors			Per Industry	Existing	4,805	15	$2,092	79%	100%	$0.05	3	3
Idaho	Petroleum Refining	Pumps	Motor rewinds			Per Industry	Existing	1,926	9	$460	5.5%	100%	$0.04	0.10	0.10
Idaho	Petroleum Refining	Pumps	Pump Equipment Upgrade			Per Industry	Existing	64,767	12	$8,095	35%	100%	$0.05	22	22
Idaho	Petroleum Refining	Pumps	Pump System Optimization			Per Industry	Existing	39,175	12	$10,069	75%	100%	$-0.03	28	28
Idaho	Petroleum Refining	Pumps	Synchronous Belts			Per Industry	Existing	3,624	10	$775	22%	100%	$0.03	0.78	0.78
Idaho	Stone Clay Glass Products	Fans	Facility Energy Management			Per Industry	Existing	17,077	2	$357	25%	100%	$0.01	4	4
Idaho	Stone Clay Glass Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	24,651	10	$27,827	23%	100%	$0.04	73	73
Idaho	Stone Clay Glass Products	Fans	High Efficiency Motors			Per Industry	Existing	13,763	15	$5,992	76%	100%	$0.05	10	10
Idaho	Stone Clay Glass Products	Fans	Improved Controls - Fans			Per Industry	Existing	56,918	10	$5,143	34%	100%	$0.04	19	19
Idaho	Stone Clay Glass Products	Fans	Properly Sized Fans			Per Industry	Existing	96,663	10	$15,377	15%	100%	$0.02	14	14
Idaho	Stone Clay Glass Products	Fans	Synchronous Belts			Per Industry	Existing	10,382	10	$2,221	21%	100%	$0.03	2	2
Idaho	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	24,838	15	$3,652	14%	100%	$0.02	3	3
Idaho	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	79,276	15	$7,436	5.0%	100%	$0.01	3	3
Idaho	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	78,023	20	$23,909	1.0%	100%	$0.01	1	1
Idaho	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	59,341	20	$7,969	6.5%	100%	$0.01	3	3

Table C-2.3. Industrial Measure Details

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Idaho	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	32,376	20	$17,778	2.5%	100%	$0.01	3	3
Idaho	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	18,457	15	$2,668	45%	100%	$0.02	8	8
Idaho	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	47,168	15	$5,369	20%	100%	$0.01	9	9
Idaho	Stone Clay Glass Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	90,556	15	$390	2.5%	100%	$0.00	9	9
Idaho	Stone Clay Glass Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	65,633	30	$15,537	4.0%	100%	$0.01	6	6
Idaho	Stone Clay Glass Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	47,783	10	$7,438	33%	100%	$0.01	48	48
Idaho	Stone Clay Glass Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	35,376	10	$970	74%	100%	$0.00	25	25
Idaho	Stone Clay Glass Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	91,526	15	$82,603	0.0%	100%	$0.26	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	Facility Energy Management			Per Industry	Existing	10,116	2	$211	75%	100%	$0.01	7	7
Idaho	Stone Clay Glass Products	Lighting	Induction (High Bay)			Per Industry	Existing	30,836	20	$92,351	0.0%	100%	$3.56	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	LED (High Bay)			Per Industry	Existing	1,588	20	$47,066	2.1%	100%	$1.66	2	2
Idaho	Stone Clay Glass Products	Lighting	Lighting Controls			Per Industry	Existing	1,223	10	$12,970	28%	100%	$0.02	28	28
Idaho	Stone Clay Glass Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	14,199	15	$41,227	40%	100%	$0.34	45	45
Idaho	Stone Clay Glass Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	63,954	15	$33,359	0.0%	100%	$0.22	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	Screw Base CFL			Per Industry	Existing	40,633	4	$9,112	10%	100%	$-0.00	45	45
Idaho	Stone Clay Glass Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	85,600	1	$7,175	0.0%	100%	$0.00	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	6,318	1	$6,299	0.0%	100%	$-0.01	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	Screw Base LED			Per Industry	Existing	44,262	12	$74,615	1.8%	100%	$0.02	8	8
Idaho	Stone Clay Glass Products	Lighting	T5 Linear Florescent			Per Industry	Existing	65,463	13	$18,561	11%	100%	$0.50	18	18
Idaho	Stone Clay Glass Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	33,769	13	$5,299	34%	100%	$0.10	44	44

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Stone Clay Glass Products	Lighting	T8 Linear Florescent			Per Industry	Existing	3,227	13	$97,280	0.0%	100%	$0.13	0.00	0.00
Idaho	Stone Clay Glass Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	38,385	13	$38,992	0.0%	100%	$0.13	0.00	0.00
Idaho	Stone Clay Glass Products	Motors Other	Facility Energy Management			Per Industry	Existing	48,614	2	$1,017	75%	100%	$0.01	35	35
Idaho	Stone Clay Glass Products	Motors Other	High Efficiency Motors			Per Industry	Existing	39,182	15	$17,058	75%	100%	$0.05	28	28
Idaho	Stone Clay Glass Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	91,697	10	$9,498	34%	100%	$0.02	30	30
Idaho	Stone Clay Glass Products	Motors Other	Motors Other			Per Industry	Existing	20,950	15	$382	90%	100%	$0.00	18	18
Idaho	Stone Clay Glass Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	14,615	10	$3,335	6.7%	100%	$0.03	0.96	0.96
Idaho	Stone Clay Glass Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	27,187	11.2	$9,802	4.7%	100%	$0.05	1	1
Idaho	Stone Clay Glass Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	14,452	8	$2,096	4.0%	100%	$0.03	0.56	0.56
Idaho	Stone Clay Glass Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	14,718	8	$1,496	4.0%	100%	$0.02	0.57	0.57
Idaho	Stone Clay Glass Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	15,864	9	$4,838	7.1%	100%	$0.05	1	1
Idaho	Stone Clay Glass Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	98,041	12	$42,366	10%	100%	$0.03	20	20
Idaho	Stone Clay Glass Products	Motors Other	Synchronous Belts			Per Industry	Existing	29,555	10	$6,322	21%	100%	$0.03	6	6
Idaho	Stone Clay Glass Products	Other	Bldg Improvements			Per Industry	Existing	2,996	15	$13,468	35%	100%	$0.02	35	35
Idaho	Stone Clay Glass Products	Other	Facility Energy Management			Per Industry	Existing	9,295	2	$194	75%	100%	$0.01	6	6
Idaho	Stone Clay Glass Products	Other	Transformers			Per Industry	Existing	8,078	30	$1,612	20%	100%	$0.02	1	1
Idaho	Stone Clay Glass Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	70,508	10	$8,793	26%	100%	$0.03	43	43
Idaho	Stone Clay Glass Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	16,757	10	$8,513	17%	100%	$0.03	36	36
Idaho	Stone Clay Glass Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	21,897	10	$34,768	30%	100%	$-0.01	93	93
Idaho	Stone Clay Glass Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	19,694	2	$412	42%	100%	$0.01	8	8
Idaho	Stone Clay Glass Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	11,739	15	$4,031	75%	100%	$0.04	8	8

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Stone Clay Glass Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	99,098	10	$6,406	3.2%	100%	$0.00	6	6
Idaho	Stone Clay Glass Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	19,683	10	$12,140	36%	100%	$0.09	6	6
Idaho	Stone Clay Glass Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	15,297	10	$7,033	36%	100%	$0.07	5	5
Idaho	Stone Clay Glass Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	63,543	10	$19,897	17%	100%	$0.05	10	10
Idaho	Stone Clay Glass Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	17,808	10	$2,458	17%	100%	$0.02	2	2
Idaho	Stone Clay Glass Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	53,533	10	$5,304	17%	100%	$0.06	42	42
Idaho	Stone Clay Glass Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	19,683	10	$6,125	17%	100%	$0.05	3	3
Idaho	Stone Clay Glass Products	Process Cool	Equipment: Chillers			Per Industry	Existing	70,490	20	$18,501	8.0%	100%	$0.03	5	5
Idaho	Stone Clay Glass Products	Process Cool	Facility Energy Management			Per Industry	Existing	7,257	2	$151	75%	100%	$0.01	5	5
Idaho	Stone Clay Glass Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	23,652	10	$20,814	34%	100%	$0.13	7	7
Idaho	Stone Clay Glass Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	62,608	10	$33,392	36%	100%	$0.01	236	236
Idaho	Stone Clay Glass Products	Process Heat	Process Heat O&M			Per Industry	Existing	8,412	2	$15,666	70%	100%	$0.02	348	348
Idaho	Stone Clay Glass Products	Process Other	Facility Energy Management			Per Industry	Existing	1,270	2	$26	75%	100%	$0.01	0.93	0.93
Idaho	Stone Clay Glass Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	52,924	10	$8,390	34%	100%	$0.02	17	17
Idaho	Stone Clay Glass Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	59,253	3	$3,662	85%	100%	$0.02	49	49
Idaho	Stone Clay Glass Products	Process Refrig	Synchronous Belts			Per Industry	Existing	5,077	10	$1,086	21%	100%	$0.03	1	1
Idaho	Stone Clay Glass Products	Pumps	Facility Energy Management			Per Industry	Existing	30,913	2	$647	75%	100%	$0.01	22	22
Idaho	Stone Clay Glass Products	Pumps	High Efficiency Motors			Per Industry	Existing	24,915	15	$10,847	76%	100%	$0.05	18	18
Idaho	Stone Clay Glass Products	Pumps	Motor rewinds			Per Industry	Existing	9,987	9	$2,387	5.3%	100%	$0.04	0.52	0.52
Idaho	Stone Clay Glass Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	35,823	12	$41,977	34%	100%	$0.05	111	111
Idaho	Stone Clay Glass Products	Pumps	Synchronous Belts			Per Industry	Existing	18,794	10	$4,020	21%	100%	$0.03	3	3

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Transportation Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	7,833	2	$163	5.3%	100%	$0.01	0.40	0.40
Idaho	Transportation Equipment Mfg	Fans	Fan System Optimization			Per Industry	Existing	32,717	10	$6,679	30%	100%	$0.03	9	9
Idaho	Transportation Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	6,314	15	$2,748	76%	100%	$0.05	4	4
Idaho	Transportation Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	26,110	10	$2,359	34%	100%	$0.04	8	8
Idaho	Transportation Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	44,343	10	$7,054	15%	100%	$0.02	6	6
Idaho	Transportation Equipment Mfg	Fans	Synchronous Belts			Per Industry	Existing	4,762	10	$1,018	21%	100%	$0.03	1	1
Idaho	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	55,156	15	$8,110	14%	100%	$0.02	7	7
Idaho	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	76,041	15	$16,513	5.0%	100%	$0.01	8	8
Idaho	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	95,316	20	$53,093	1.0%	100%	$0.01	3	3
Idaho	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	31,772	20	$17,697	6.5%	100%	$0.01	8	8
Idaho	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	93,953	20	$39,479	2.5%	100%	$0.01	7	7
Idaho	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	40,986	15	$5,926	45%	100%	$0.02	18	18
Idaho	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	4,742	15	$11,923	20%	100%	$0.01	20	20
Idaho	Transportation Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	67,264	15	$867	2.5%	100%	$0.00	21	21
Idaho	Transportation Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	67,803	30	$34,502	4.0%	100%	$0.01	14	14
Idaho	Transportation Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	28,167	10	$16,518	33%	100%	$0.01	107	107
Idaho	Transportation Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	78,556	10	$2,154	74%	100%	$0.00	57	57
Idaho	Transportation Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	4,874	15	$8,741	0.0%	100%	$0.26	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	22,645	2	$473	75%	100%	$0.01	16	16

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Transportation Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	69,024	20	$45,131	0.0%	100%	$3.56	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	27,396	20	$86,811	2.1%	100%	$1.66	4	4
Idaho	Transportation Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	26,578	10	$29,033	28%	100%	$0.02	62	62
Idaho	Transportation Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	55,626	15	$63,807	40%	100%	$0.34	100	100
Idaho	Transportation Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	43,156	15	$98,513	0.0%	100%	$0.22	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	86,319	4	$20,397	10%	100%	$-0.00	101	101
Idaho	Transportation Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	63,132	1	$16,061	0.0%	100%	$0.00	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	37,985	1	$14,101	0.0%	100%	$-0.01	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	94,442	12	$67,020	1.8%	100%	$0.02	18	18
Idaho	Transportation Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	70,375	13	$84,595	11%	100%	$0.50	41	41
Idaho	Transportation Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	99,430	13	$35,703	34%	100%	$0.10	99	99
Idaho	Transportation Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	31,066	13	$17,753	0.0%	100%	$0.13	0.00	0.00
Idaho	Transportation Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	9,763	13	$11,121	0.0%	100%	$0.13	0.00	0.00
Idaho	Transportation Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	17,577	2	$367	75%	100%	$0.01	12	12
Idaho	Transportation Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	14,166	15	$6,167	75%	100%	$0.05	10	10
Idaho	Transportation Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	33,154	10	$3,434	34%	100%	$0.02	10	10
Idaho	Transportation Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	7,575	15	$138	90%	100%	$0.00	6	6
Idaho	Transportation Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	5,284	10	$1,205	6.7%	100%	$0.03	0.35	0.35
Idaho	Transportation Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	9,829	11.2	$3,544	4.7%	100%	$0.05	0.45	0.45
Idaho	Transportation Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	5,225	8	$758	4.0%	100%	$0.03	0.20	0.20
Idaho	Transportation Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	5,321	8	$541	4.0%	100%	$0.02	0.20	0.20

Table C-2.3. Industrial Measure Details

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Idaho	Transportation Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	5,735	9	$1,749	7.1%	100%	$0.05	0.39	0.39
Idaho	Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	71,604	12	$15,318	10%	100%	$0.03	7	7
Idaho	Transportation Equipment Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	10,686	10	$2,286	21%	100%	$0.03	2	2
Idaho	Transportation Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	69,615	15	$9,103	35%	100%	$0.02	23	23
Idaho	Transportation Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	6,282	2	$131	75%	100%	$0.01	4	4
Idaho	Transportation Equipment Mfg	Other	Transformers			Per Industry	Existing	5,459	30	$1,090	20%	100%	$0.02	1	1
Idaho	Transportation Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	57,872	10	$8,141	26%	100%	$0.03	40	40
Idaho	Transportation Equipment Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	693	10	$7,882	17%	100%	$0.03	33	33
Idaho	Transportation Equipment Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	98,041	10	$32,192	30%	100%	$-0.01	86	86
Idaho	Transportation Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	18,235	2	$381	42%	100%	$0.01	7	7
Idaho	Transportation Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	10,869	15	$3,733	75%	100%	$0.04	8	8
Idaho	Transportation Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	84,343	10	$5,931	3.2%	100%	$0.00	5	5
Idaho	Transportation Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	18,224	10	$11,240	36%	100%	$0.09	6	6
Idaho	Transportation Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	14,163	10	$6,512	36%	100%	$0.07	4	4
Idaho	Transportation Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	58,834	10	$18,422	17%	100%	$0.05	9	9
Idaho	Transportation Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	16,489	10	$2,276	17%	100%	$0.02	2	2
Idaho	Transportation Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	34,744	10	$97,500	17%	100%	$0.06	39	39
Idaho	Transportation Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	18,224	10	$5,671	17%	100%	$0.05	3	3
Idaho	Transportation Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	66,410	20	$17,430	8.0%	100%	$0.03	5	5
Idaho	Transportation Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	6,837	2	$143	75%	100%	$0.01	5	5
Idaho	Transportation Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	22,283	10	$19,609	34%	100%	$0.13	7	7

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Transportation Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	26,875	10	$11,433	36%	100%	$0.01	80	80
Idaho	Transportation Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	74,079	2	$5,364	70%	100%	$0.02	119	119
Idaho	Transportation Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	1,977	2	$41	75%	100%	$0.01	1	1
Idaho	Transportation Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	32,122	10	$5,092	34%	100%	$0.02	10	10
Idaho	Transportation Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	35,963	3	$2,222	85%	100%	$0.02	30	30
Idaho	Transportation Equipment Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	3,081	10	$659	21%	100%	$0.03	0.63	0.63
Idaho	Transportation Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	17,116	2	$358	75%	100%	$0.01	12	12
Idaho	Transportation Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	13,795	15	$6,005	76%	100%	$0.05	10	10
Idaho	Transportation Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	5,529	9	$1,322	5.3%	100%	$0.04	0.29	0.29
Idaho	Transportation Equipment Mfg	Pumps	Synchronous Belts			Per Industry	Existing	10,406	10	$2,226	21%	100%	$0.03	2	2
Idaho	Wastewater	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	3.0%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
Idaho	Wastewater	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Wastewater	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	10,234	15	$20,419	0.0%	100%	$0.26	0.00	0.00
Idaho	Wastewater	Lighting	Facility Energy Management			Per Industry	Existing	1,131	2	$23	75%	100%	$0.01	0.83	0.83
Idaho	Wastewater	Lighting	Induction (High Bay)			Per Industry	Existing	3,448	20	$22,148	0.0%	100%	$3.56	0.00	0.00
Idaho	Wastewater	Lighting	LED (High Bay)			Per Industry	Existing	11,359	20	$84,177	2.1%	100%	$1.66	0.23	0.23
Idaho	Wastewater	Lighting	Lighting Controls			Per Industry	Existing	11,318	10	$1,450	28%	100%	$0.02	3	3
Idaho	Wastewater	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	12,770	15	$38,156	40%	100%	$0.34	5	5
Idaho	Wastewater	Lighting	Metal Halide (High Bay)			Per Industry	Existing	7,151	15	$14,912	0.0%	100%	$0.22	0.00	0.00
Idaho	Wastewater	Lighting	Screw Base CFL			Per Industry	Existing	49,272	4	$1,018	10%	100%	$-0.00	5	5
Idaho	Wastewater	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	43,118	1	$802	0.0%	100%	$0.00	0.00	0.00
Idaho	Wastewater	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	11,888	1	$704	0.0%	100%	$-0.01	0.00	0.00
Idaho	Wastewater	Lighting	Screw Base LED			Per Industry	Existing	49,678	12	$8,343	1.8%	100%	$0.02	0.90	0.90
Idaho	Wastewater	Lighting	T5 Linear Florescent			Per Industry	Existing	18,502	13	$69,168	11%	100%	$0.50	2	2
Idaho	Wastewater	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	14,958	13	$11,774	34%	100%	$0.10	4	4
Idaho	Wastewater	Lighting	T8 Linear Florescent			Per Industry	Existing	11,543	13	$10,878	0.0%	100%	$0.13	0.00	0.00
Idaho	Wastewater	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	15,474	13	$15,542	0.0%	100%	$0.13	0.00	0.00
Idaho	Wastewater	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Wastewater	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	11%	100%	.	0.00	0.00
Idaho	Wastewater	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Idaho	Wastewater	Other	Bldg Improvements			Per Industry	Existing	94,347	15	$12,337	35%	100%	$0.02	32	32
Idaho	Wastewater	Other	Facility Energy Management			Per Industry	Existing	8,514	2	$178	75%	100%	$0.01	6	6
Idaho	Wastewater	Other	Transformers			Per Industry	Existing	7,399	30	$1,477	20%	100%	$0.02	1	1
Idaho	Wastewater	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	41,249	10	$17,598	26%	100%	$0.03	87	87
Idaho	Wastewater	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	33,809	10	$17,037	17%	100%	$0.03	72	72
Idaho	Wastewater	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	44,233	10	$69,584	30%	100%	$-0.01	187	187
Idaho	Wastewater	Process Aircomp	Facility Energy Management			Per Industry	Existing	39,416	2	$824	66%	100%	$0.01	25	25
Idaho	Wastewater	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	23,494	15	$8,069	75%	100%	$0.04	17	17
Idaho	Wastewater	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	98,468	10	$12,821	8.8%	100%	$0.00	34	34
Idaho	Wastewater	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Wastewater	Pumps	Facility Energy Management			Per Industry	Existing	10,479	2	$219	75%	100%	$0.01	7	7
Idaho	Wastewater	Pumps	High Efficiency Motors			Per Industry	Existing	8,446	15	$3,677	75%	100%	$0.05	6	6
Idaho	Wastewater	Pumps	Motor rewinds			Per Industry	Existing	3,385	9	$809	5.3%	100%	$0.04	0.17	0.17
Idaho	Wastewater	Pumps	Pump Equipment Upgrade			Per Industry	Existing	13,840	12	$14,230	34%	100%	$0.05	37	37
Idaho	Wastewater	Pumps	Pump System Optimization			Per Industry	Existing	68,859	12	$17,699	75%	100%	$-0.03	50	50
Idaho	Wastewater	Pumps	Synchronous Belts			Per Industry	Existing	6,371	10	$1,362	21%	100%	$0.03	1	1
Idaho	Water	Fans	Efficient Centrifugal Fan			Per Industry	Existing	20,176	10	$58,213	11%	100%	$0.03	33	33
Idaho	Water	Fans	Facility Energy Management			Per Industry	Existing	29,473	2	$616	3.0%	100%	$0.01	0.86	0.86
Idaho	Water	Fans	Fan Equipment Upgrade			Per Industry	Existing	60,309	10	$48,026	23%	100%	$0.04	126	126
Idaho	Water	Fans	Fan System Optimization			Per Industry	Existing	23,090	10	$25,129	30%	100%	$0.03	35	35
Idaho	Water	Fans	High Efficiency Motors			Per Industry	Existing	23,754	15	$10,341	75%	100%	$0.05	17	17
Idaho	Water	Fans	Improved Controls - Fans			Per Industry	Existing	98,234	10	$8,877	34%	100%	$0.04	32	32
Idaho	Water	Fans	Properly Sized Fans			Per Industry	Existing	66,829	10	$26,540	15%	100%	$0.02	24	24
Idaho	Water	Fans	Synchronous Belts			Per Industry	Existing	17,918	10	$3,833	21%	100%	$0.03	3	3
Idaho	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Idaho	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Idaho	Water	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Idaho	Water	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

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Idaho	Water	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Water	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Idaho	Water	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Idaho	Water	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Idaho	Water	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Idaho	Water	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Idaho	Water	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Idaho	Water	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	51,173	15	$2,095	0.0%	100%	$0.26	0.00	0.00
Idaho	Water	Lighting	Facility Energy Management			Per Industry	Existing	5,656	2	$118	75%	100%	$0.01	4	4
Idaho	Water	Lighting	Induction (High Bay)			Per Industry	Existing	17,240	20	$10,742	0.0%	100%	$3.56	0.00	0.00
Idaho	Water	Lighting	LED (High Bay)			Per Industry	Existing	56,798	20	$20,888	2.1%	100%	$1.66	1	1
Idaho	Water	Lighting	Lighting Controls			Per Industry	Existing	56,594	10	$7,251	28%	100%	$0.02	15	15
Idaho	Water	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	63,850	15	$90,783	40%	100%	$0.34	25	25
Idaho	Water	Lighting	Metal Halide (High Bay)			Per Industry	Existing	35,757	15	$74,562	0.0%	100%	$0.22	0.00	0.00
Idaho	Water	Lighting	Screw Base CFL			Per Industry	Existing	46,361	4	$5,094	10%	100%	$-0.00	25	25
Idaho	Water	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	15,592	1	$4,011	0.0%	100%	$0.00	0.00	0.00
Idaho	Water	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	59,443	1	$3,522	0.0%	100%	$-0.01	0.00	0.00
Idaho	Water	Lighting	Screw Base LED			Per Industry	Existing	48,390	12	$41,718	1.8%	100%	$0.02	4	4
Idaho	Water	Lighting	T5 Linear Florescent			Per Industry	Existing	92,511	13	$45,842	11%	100%	$0.50	10	10
Idaho	Water	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	74,791	13	$58,873	34%	100%	$0.10	24	24
Idaho	Water	Lighting	T8 Linear Florescent			Per Industry	Existing	57,715	13	$54,390	0.0%	100%	$0.13	0.00	0.00
Idaho	Water	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	77,372	13	$77,711	0.0%	100%	$0.13	0.00	0.00
Idaho	Water	Motors Other	Facility Energy Management			Per Industry	Existing	29,473	2	$616	75%	100%	$0.01	21	21
Idaho	Water	Motors Other	High Efficiency Motors			Per Industry	Existing	23,754	15	$10,341	75%	100%	$0.05	17	17
Idaho	Water	Motors Other	Improved Controls - Motors			Per Industry	Existing	55,593	10	$5,758	34%	100%	$0.02	18	18
Idaho	Water	Motors Other	Motors Other			Per Industry	Existing	12,701	15	$231	90%	100%	$0.00	11	11
Idaho	Water	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	8,860	10	$2,022	6.7%	100%	$0.03	0.58	0.58
Idaho	Water	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	16,482	11.2	$5,942	4.7%	100%	$0.05	0.76	0.76

Table C-2.3. Industrial Measure Details

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Idaho	Water	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	8,761	8	$1,271	4.0%	100%	$0.03	0.34	0.34
Idaho	Water	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	8,923	8	$907	4.0%	100%	$0.02	0.35	0.35
Idaho	Water	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	9,617	9	$2,933	7.1%	100%	$0.05	0.66	0.66
Idaho	Water	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	20,066	12	$25,685	11%	100%	$0.03	12	12
Idaho	Water	Motors Other	Synchronous Belts			Per Industry	Existing	17,918	10	$3,833	21%	100%	$0.03	3	3
Idaho	Water	Other	Bldg Improvements			Per Industry	Existing	71,737	15	$61,686	35%	100%	$0.02	162	162
Idaho	Water	Other	Facility Energy Management			Per Industry	Existing	42,572	2	$891	75%	100%	$0.01	31	31
Idaho	Water	Other	Transformers			Per Industry	Existing	36,998	30	$7,387	20%	100%	$0.02	7	7
Idaho	Water	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Water	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Water	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Water	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Idaho	Water	Pumps	Facility Energy Management			Per Industry	Existing	90,534	2	$3,987	60%	100%	$0.01	111	111
Idaho	Water	Pumps	High Efficiency Motors			Per Industry	Existing	53,566	15	$66,857	75%	100%	$0.05	113	113
Idaho	Water	Pumps	Motor rewinds			Per Industry	Existing	61,554	9	$14,716	5.3%	100%	$0.04	3	3
Idaho	Water	Pumps	Pump Equipment Upgrade			Per Industry	Existing	69,830	12	$58,728	34%	100%	$0.05	683	683
Idaho	Water	Pumps	Pump System Optimization			Per Industry	Existing	51,983	12	$21,813	15%	100%	$-0.03	189	189
Idaho	Water	Pumps	Synchronous Belts			Per Industry	Existing	15,837	10	$24,781	21%	100%	$0.03	23	23
Utah	Agriculture	Fans	Circulating Fans			Per Industry	Existing	22,438	10	$63,583	32%	100%	$0.11	1,156	1,156
Utah	Agriculture	Fans	High-efficiency Ventilation Systems			Per Industry	Existing	88,477	10	$55,062	32%	100%	$0.15	1,309	1,309
Utah	Agriculture	Fans	Programmable Ventilation Controllers			Per Industry	Existing	70,448	10	$7,942	32%	100%	$0.01	23	23
Utah	Agriculture	Motors Other	VFDs - Potato / Onion Shed			Per Industry	Existing	50,631	10	$92,631	0.1%	100%	$0.02	27	27
Utah	Agriculture	Other	Agricultural Engine Block Heater Timers			Per Industry	Existing	91,560	10	$79,327	18%	100%	$0.00	239	239
Utah	Agriculture	Process Cool	Milk Precoolers			Per Industry	Existing	61,075	15	$99,125	0.4%	100%	$0.04	3	3
Utah	Agriculture	Process Heat	Heat Lamp Setback (Microzone)			Per Industry	Existing	17,019	15	$53,893	1.4%	100%	$0.01	4	4
Utah	Agriculture	Process Heat	Heat Lamp/Heating Pad Controller			Per Industry	Existing	32,853	15	$28,889	1.4%	100%	$0.01	17	17
Utah	Agriculture	Process Heat	Heat Lamps			Per Industry	Existing	77,646	10	$44,911	1.4%	100%	$0.00	33	33
Utah	Agriculture	Process Heat	Heat Reclaimers			Per Industry	Existing	97,080	15	$3,868	0.4%	100%	$0.05	31	31
Utah	Agriculture	Process Heat	High-efficiency Livestock Waterers			Per Industry	Existing	25,486	10	$49,933	32%	100%	$0.03	2,602	2,602
Utah	Agriculture	Pumps	Automatic Milker Takeoffs			Per Industry	Existing	8,975	15	$66,406	0.4%	100%	$0.05	6	6
Utah	Agriculture	Pumps	VFDs for Dairy Vacuum Pumps			Per Industry	Existing	74,576	15	$29,084	0.4%	100%	$0.01	118	118
Utah	Chemical Mfg	Fans	Facility Energy Management			Per Industry	Existing	57,736	2	$11,673	27%	100%	$0.00	156	156
Utah	Chemical Mfg	Fans	High Efficiency Motors			Per Industry	Existing	49,524	15	$95,705	73%	100%	$0.03	338	338
Utah	Chemical Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	58,941	10	$68,000	33%	100%	$0.01	630	630

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Utah	Chemical Mfg	Fans	Properly Sized Fans			Per Industry	Existing	56,996	10	$2,235	15%	100%	$0.01	475	475
Utah	Chemical Mfg	Fans	Synchronous Belts			Per Industry	Existing	39,083	10	$72,540	21%	100%	$0.02	71	71
Utah	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	2,892	15	$32,765	14%	100%	$0.01	125	125
Utah	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	81,721	15	$70,324	5.0%	100%	$0.01	148	148
Utah	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	71,171	20	$69,115	1.0%	100%	$0.01	66	66
Utah	Chemical Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	57,057	20	$89,705	6.5%	100%	$0.01	144	144
Utah	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	11,897	20	$46,265	2.5%	100%	$0.01	123	123
Utah	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	70,924	15	$97,017	45%	100%	$0.01	310	310
Utah	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	14,584	15	$95,174	20%	100%	$0.01	352	352
Utah	Chemical Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	96,755	15	$14,196	2.5%	100%	$0.00	364	364
Utah	Chemical Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	20,782	30	$64,788	4.0%	100%	$0.01	247	247
Utah	Chemical Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	71,958	10	$70,394	33%	100%	$0.00	1,804	1,804
Utah	Chemical Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	85,938	10	$35,265	73%	100%	$0.00	959	959
Utah	Chemical Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	59,410	15	$3,298	0.0%	100%	$0.16	0.00	0.00
Utah	Chemical Mfg	Lighting	Facility Energy Management			Per Industry	Existing	49,228	2	$7,309	75%	100%	$0.00	269	269
Utah	Chemical Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	64,441	20	$6,923	0.0%	100%	$2.82	0.00	0.00
Utah	Chemical Mfg	Lighting	LED (High Bay)			Per Industry	Existing	6,739	20	$55,151	2.1%	100%	$1.29	76	76
Utah	Chemical Mfg	Lighting	Lighting Controls			Per Industry	Existing	94,124	10	$47,729	28%	100%	$0.01	1,013	1,013
Utah	Chemical Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	42,070	15	$78,844	40%	100%	$0.24	1,626	1,626
Utah	Chemical Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	7,654	15	$3,444	0.0%	100%	$0.17	0.00	0.00
Utah	Chemical Mfg	Lighting	Screw Base CFL			Per Industry	Existing	10,252	4	$14,548	10%	100%	$0.00	1,636	1,636
Utah	Chemical Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	10,555	1	$47,689	0.0%	100%	$0.00	0.00	0.00
Utah	Chemical Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	70,024	1	$17,469	0.0%	100%	$0.00	0.00	0.00
Utah	Chemical Mfg	Lighting	Screw Base LED			Per Industry	Existing	35,524	12	$75,662	1.8%	100%	$0.01	291	291
Utah	Chemical Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	11,642	13	$52,161	11%	100%	$0.30	664	664
Utah	Chemical Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	17,591	13	$34,842	34%	100%	$0.06	1,611	1,611
Utah	Chemical Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	63,330	13	$58,031	0.0%	100%	$0.08	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Chemical Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	76,940	13	$97,874	0.0%	100%	$0.08	0.00	0.00
Utah	Chemical Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	51,392	2	$26,191	75%	100%	$0.00	965	965
Utah	Chemical Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	8,596	15	$39,103	74%	100%	$0.03	767	767
Utah	Chemical Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	60,408	10	$44,496	33%	100%	$0.01	808	808
Utah	Chemical Mfg	Motors Other	Motors Other			Per Industry	Existing	39,299	15	$9,834	89%	100%	$0.00	492	492
Utah	Chemical Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	76,218	10	$85,855	6.7%	100%	$0.02	25	25
Utah	Chemical Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	99,840	11.2	$52,317	4.6%	100%	$0.03	33	33
Utah	Chemical Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	72,018	8	$53,967	3.9%	100%	$0.01	15	15
Utah	Chemical Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	78,863	8	$38,533	3.9%	100%	$0.01	15	15
Utah	Chemical Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	8,361	9	$24,546	7.0%	100%	$0.02	29	29
Utah	Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	97,839	12	$90,582	10%	100%	$0.02	543	543
Utah	Chemical Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	60,800	10	$62,758	21%	100%	$0.02	162	162
Utah	Chemical Mfg	Other	Bldg Improvements			Per Industry	Existing	58,450	15	$3,788	35%	100%	$0.01	560	560
Utah	Chemical Mfg	Other	Facility Energy Management			Per Industry	Existing	40,644	2	$2,943	75%	100%	$0.00	108	108
Utah	Chemical Mfg	Other	Transformers			Per Industry	Existing	22,228	30	$24,405	20%	100%	$0.02	25	25
Utah	Chemical Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	39,643	10	$79,642	28%	100%	$0.00	3,230	3,230
Utah	Chemical Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	98,261	2	$27,172	16%	100%	$0.00	214	214
Utah	Chemical Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	73,845	15	$65,775	81%	100%	$0.03	642	642
Utah	Chemical Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	24,261	10	$22,285	59%	100%	$0.00	7,952	7,952
Utah	Chemical Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	97,511	10	$295	38%	100%	$0.05	511	511
Utah	Chemical Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	8,392	10	$63,667	38%	100%	$0.04	397	397
Utah	Chemical Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	88,705	10	$11,586	18%	100%	$0.02	788	788
Utah	Chemical Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	73,938	10	$62,060	18%	100%	$0.01	221	221
Utah	Chemical Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	12,512	10	$41,521	18%	100%	$0.03	3,147	3,147
Utah	Chemical Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	97,511	10	$3,792	18%	100%	$0.02	244	244
Utah	Chemical Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	69,810	1	$97,108	10%	100%	$0.00	1,539	1,539
Utah	Chemical Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	47,375	10	$51,745	28%	100%	$0.01	1,616	1,616
Utah	Chemical Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	68,207	20	$45,308	30%	100%	$0.01	1,039	1,039
Utah	Chemical Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	92,013	20	$56,418	8.0%	100%	$0.02	550	550
Utah	Chemical Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	89,009	2	$14,420	75%	100%	$0.00	531	531
Utah	Chemical Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	45,471	10	$76,014	34%	100%	$0.07	779	779

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Chemical Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	19,267	10	$12,629	33%	100%	$0.00	1,428	1,428
Utah	Chemical Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	37,403	2	$99,758	63%	100%	$0.00	2,111	2,111
Utah	Chemical Mfg	Process Other	Facility Energy Management			Per Industry	Existing	10,689	2	$223	75%	100%	$0.00	8	8
Utah	Chemical Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	86,956	10	$62,566	34%	100%	$0.01	799	799
Utah	Chemical Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	60,431	3	$58,265	85%	100%	$0.00	2,237	2,237
Utah	Chemical Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	19,406	10	$46,937	21%	100%	$0.02	47	47
Utah	Chemical Mfg	Pumps	Facility Energy Management			Per Industry	Existing	18,584	2	$25,504	59%	100%	$0.00	743	743
Utah	Chemical Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	82,154	15	$27,591	76%	100%	$0.03	767	767
Utah	Chemical Mfg	Pumps	Motor rewinds			Per Industry	Existing	93,678	9	$94,123	5.4%	100%	$0.02	21	21
Utah	Chemical Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	37,835	12	$54,729	34%	100%	$0.01	4,630	4,630
Utah	Chemical Mfg	Pumps	Pump System Optimization			Per Industry	Existing	7,204	12	$58,193	16%	100%	$0.02	1,288	1,288
Utah	Chemical Mfg	Pumps	Synchronous Belts			Per Industry	Existing	40,853	10	$58,491	21%	100%	$0.02	162	162
Utah	Data Center	Fans	Data Center - Cooling Improvements			Per Industry	Existing	47,827	4	$43,053	100%	N/A	$0.01	15,672	15,672
Utah	Data Center	Hvac	Data Center - Cooling Improvements			Per Industry	Existing	65,218	4	$7,633	100%	N/A	$0.05	10,448	10,448
Utah	Data Center	Other	Data Center - High Efficiency Server			Per Industry	Existing	65,606	4	$92,847	100%	N/A	$0.07	40,076	40,076
Utah	Data Center	Other	Data Center - Server Virtualization			Per Industry	Existing	70,123	4	$12,947	100%	N/A	$0.02	31,077	31,077
Utah	Electronic Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	73,557	2	$5,725	27%	100%	$0.00	76	76
Utah	Electronic Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	20,482	15	$95,989	74%	100%	$0.03	167	167
Utah	Electronic Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	11,770	10	$82,400	33%	100%	$0.01	311	311
Utah	Electronic Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	48,438	10	$46,335	15%	100%	$0.01	235	235
Utah	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	90,516	15	$7,398	14%	100%	$0.01	290	290
Utah	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	72,211	15	$25,896	5.0%	100%	$0.01	343	343
Utah	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	83,064	20	$12,311	1.0%	100%	$0.01	154	154
Utah	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	94,354	20	$70,770	6.5%	100%	$0.01	333	333
Utah	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	41,253	20	$96,334	2.5%	100%	$0.01	286	286
Utah	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	53,428	15	$24,629	45%	100%	$0.01	718	718

Table C-2.3. Industrial Measure Details

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Utah	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	69,871	15	$51,899	20%	100%	$0.01	816	816
Utah	Electronic Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	70,539	15	$32,870	2.5%	100%	$0.00	844	844
Utah	Electronic Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	40,253	30	$7,686	4.0%	100%	$0.01	573	573
Utah	Electronic Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	37,994	10	$26,059	39%	100%	$0.00	4,973	4,973
Utah	Electronic Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	77,403	10	$81,653	86%	100%	$0.00	2,645	2,645
Utah	Electronic Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	12,768	15	$88,627	0.0%	100%	$0.16	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	30,431	2	$17,380	75%	100%	$0.00	640	640
Utah	Electronic Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	31,137	20	$63,378	0.0%	100%	$2.82	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	38,684	20	$95,992	2.1%	100%	$1.29	181	181
Utah	Electronic Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	8,685	10	$64,657	28%	100%	$0.01	2,409	2,409
Utah	Electronic Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	73,858	15	$8,941	40%	100%	$0.24	3,868	3,868
Utah	Electronic Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	49,585	15	$46,541	0.0%	100%	$0.17	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	68,492	4	$47,964	10%	100%	$0.00	3,892	3,892
Utah	Electronic Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	51,198	1	$88,982	0.0%	100%	$0.00	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	26,960	1	$17,122	0.0%	100%	$0.00	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	66,378	12	$24,672	1.8%	100%	$0.01	692	692
Utah	Electronic Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	81,728	13	$73,352	11%	100%	$0.30	1,579	1,579
Utah	Electronic Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	80,180	13	$43,298	34%	100%	$0.06	3,831	3,831
Utah	Electronic Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	73,251	13	$85,070	0.0%	100%	$0.08	0.00	0.00
Utah	Electronic Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	59,098	13	$8,877	0.0%	100%	$0.08	0.00	0.00

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Utah	Electronic Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	13,780	2	$12,846	75%	100%	$0.00	473	473
Utah	Electronic Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	94,694	15	$15,370	75%	100%	$0.03	380	380
Utah	Electronic Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	57,729	10	$19,920	34%	100%	$0.01	400	400
Utah	Electronic Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	64,514	15	$4,823	90%	100%	$0.00	244	244
Utah	Electronic Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	84,527	10	$42,110	6.7%	100%	$0.02	12	12
Utah	Electronic Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	43,256	11.2	$23,756	4.7%	100%	$0.03	16	16
Utah	Electronic Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	82,467	8	$26,469	4.0%	100%	$0.01	7	7
Utah	Electronic Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	85,824	8	$18,899	4.0%	100%	$0.01	7	7
Utah	Electronic Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	292	9	$61,087	7.0%	100%	$0.02	14	14
Utah	Electronic Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	379	12	$34,907	10%	100%	$0.02	269	269
Utah	Electronic Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	96,299	15	$5,640	35%	100%	$0.01	1,942	1,942
Utah	Electronic Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	86,995	2	$10,192	75%	100%	$0.00	375	375
Utah	Electronic Equipment Mfg	Other	Transformers			Per Industry	Existing	23,230	30	$84,506	20%	100%	$0.02	87	87
Utah	Electronic Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	12,801	10	$84,302	26%	100%	$0.00	1,446	1,446
Utah	Electronic Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	36,769	2	$13,327	72%	100%	$0.00	470	470
Utah	Electronic Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	79,554	15	$30,357	74%	100%	$0.03	287	287
Utah	Electronic Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	37,165	10	$7,121	3.2%	100%	$0.00	209	209
Utah	Electronic Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	36,401	10	$92,527	35%	100%	$0.05	229	229
Utah	Electronic Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	94,594	10	$27,419	35%	100%	$0.04	178	178
Utah	Electronic Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	54,469	10	$43,305	17%	100%	$0.02	353	353
Utah	Electronic Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	75,791	10	$79,487	17%	100%	$0.01	98	98

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Electronic Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	97,125	10	$4,666	17%	100%	$0.03	1,409	1,409
Utah	Electronic Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	36,401	10	$98,051	17%	100%	$0.02	109	109
Utah	Electronic Equipment Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	57,898	1	$39,945	10%	100%	$0.00	633	633
Utah	Electronic Equipment Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	81,937	10	$85,827	28%	100%	$0.01	665	665
Utah	Electronic Equipment Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	85,527	20	$24,314	30%	100%	$0.01	427	427
Utah	Electronic Equipment Mfg	Process Cool	Elec Chip Fab: Solidstate Chiller			Per Industry	Existing	55,270	10	$45,737	20%	100%	$0.04	2,849	2,849
Utah	Electronic Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	52,789	20	$22,510	8.0%	100%	$0.02	226	226
Utah	Electronic Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	83,426	2	$5,932	75%	100%	$0.00	218	218
Utah	Electronic Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	23,684	10	$12,842	34%	100%	$0.07	320	320
Utah	Electronic Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	14,128	10	$43,095	36%	100%	$0.00	6,941	6,941
Utah	Electronic Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	59,172	2	$42,468	69%	100%	$0.00	10,258	10,258
Utah	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust			Per Industry	Existing	5,306	10	$19,661	80%	100%	$0.01	86	86
Utah	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector			Per Industry	Existing	6,121	10	$48,424	35%	100%	$0.04	758	758
Utah	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure			Per Industry	Existing	10,612	10	$0.00	50%	100%	$0.00	108	108
Utah	Electronic Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	38,775	2	$811	75%	100%	$0.00	29	29
Utah	Electronic Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	21,702	10	$77,830	34%	100%	$0.01	392	392
Utah	Electronic Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	55,836	3	$77,625	85%	100%	$0.00	1,097	1,097
Utah	Electronic Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	97,689	2	$12,509	75%	100%	$0.00	460	460
Utah	Electronic Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	81,725	15	$9,724	73%	100%	$0.03	361	361
Utah	Electronic Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	93,090	9	$46,165	5.2%	100%	$0.02	10	10
Utah	Food Mfg	Fans	Facility Energy Management			Per Industry	Existing	42,214	2	$9,255	3.7%	100%	$0.00	17	17
Utah	Food Mfg	Fans	Fan System Optimization			Per Industry	Existing	46,835	10	$77,045	30%	100%	$0.02	562	562
Utah	Food Mfg	Fans	High Efficiency Motors			Per Industry	Existing	56,415	15	$55,169	75%	100%	$0.03	275	275

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Food Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	73,904	10	$33,203	34%	100%	$0.01	512	512
Utah	Food Mfg	Fans	Properly Sized Fans			Per Industry	Existing	3,096	10	$98,208	15%	100%	$0.01	386	386
Utah	Food Mfg	Fans	Synchronous Belts			Per Industry	Existing	68,849	10	$57,515	21%	100%	$0.02	58	58
Utah	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	52,450	15	$28,279	14%	100%	$0.01	215	215
Utah	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	54,888	15	$64,800	5.0%	100%	$0.01	254	254
Utah	Food Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	26,658	20	$94,374	1.0%	100%	$0.01	114	114
Utah	Food Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	8,886	20	$98,124	6.5%	100%	$0.01	247	247
Utah	Food Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	73,668	20	$11,201	2.5%	100%	$0.01	212	212
Utah	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	53,599	15	$66,813	45%	100%	$0.01	533	533
Utah	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	48,088	15	$35,587	20%	100%	$0.01	606	606
Utah	Food Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	10,175	15	$24,410	2.5%	100%	$0.00	627	627
Utah	Food Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	52,249	30	$71,108	4.0%	100%	$0.01	425	425
Utah	Food Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	36,649	10	$64,921	33%	100%	$0.00	3,102	3,102
Utah	Food Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	11,066	10	$60,637	73%	100%	$0.00	1,650	1,650
Utah	Food Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	56,866	15	$79,063	0.0%	100%	$0.16	0.00	0.00
Utah	Food Mfg	Lighting	Facility Energy Management			Per Industry	Existing	80,038	2	$16,326	75%	100%	$0.00	601	601
Utah	Food Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	77,538	20	$22,280	0.0%	100%	$2.82	0.00	0.00
Utah	Food Mfg	Lighting	LED (High Bay)			Per Industry	Existing	32,663	20	$91,811	2.1%	100%	$1.29	170	170
Utah	Food Mfg	Lighting	Lighting Controls			Per Industry	Existing	4,484	10	$49	28%	100%	$0.01	2,263	2,263
Utah	Food Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	5,018	15	$9,257	40%	100%	$0.24	3,633	3,633
Utah	Food Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	31,021	15	$82,265	0.0%	100%	$0.17	0.00	0.00
Utah	Food Mfg	Lighting	Screw Base CFL			Per Industry	Existing	73,657	4	$2,575	10%	100%	$0.00	3,656	3,656
Utah	Food Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	30,489	1	$53,240	0.0%	100%	$0.00	0.00	0.00
Utah	Food Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	97,376	1	$85,741	0.0%	100%	$0.00	0.00	0.00
Utah	Food Mfg	Lighting	Screw Base LED			Per Industry	Existing	53,466	12	$53,005	1.8%	100%	$0.01	650	650
Utah	Food Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	57,539	13	$92,242	11%	100%	$0.30	1,483	1,483

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Food Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	13,863	13	$18,792	34%	100%	$0.06	3,598	3,598
Utah	Food Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	59,064	13	$507	0.0%	100%	$0.08	0.00	0.00
Utah	Food Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	69,786	13	$16,545	0.0%	100%	$0.08	0.00	0.00
Utah	Food Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	99,514	2	$48,128	75%	100%	$0.00	1,773	1,773
Utah	Food Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	53,361	15	$6,881	73%	100%	$0.03	1,392	1,392
Utah	Food Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	37,401	10	$49,278	33%	100%	$0.01	1,466	1,466
Utah	Food Mfg	Motors Other	Motors Other			Per Industry	Existing	90,997	15	$18,072	88%	100%	$0.00	893	893
Utah	Food Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	91,326	10	$57,765	6.6%	100%	$0.02	46	46
Utah	Food Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	86,002	11.2	$63,650	4.6%	100%	$0.03	61	61
Utah	Food Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	83,608	8	$99,168	3.9%	100%	$0.01	27	27
Utah	Food Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	96,185	8	$70,808	3.9%	100%	$0.01	27	27
Utah	Food Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	50,390	9	$28,862	6.9%	100%	$0.02	53	53
Utah	Food Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	67,607	12	$4,015	10%	100%	$0.02	985	985
Utah	Food Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	98,018	10	$99,078	20%	100%	$0.02	294	294
Utah	Food Mfg	Other	Bldg Improvements			Per Industry	Existing	92,085	15	$28,144	35%	100%	$0.01	3,380	3,380
Utah	Food Mfg	Other	Facility Energy Management			Per Industry	Existing	47,600	2	$17,740	75%	100%	$0.00	653	653
Utah	Food Mfg	Other	Transformers			Per Industry	Existing	36,618	30	$47,080	20%	100%	$0.02	151	151
Utah	Food Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	96,665	10	$96,244	17%	100%	$0.00	859	859
Utah	Food Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	20,344	10	$1,486	29%	100%	$0.01	2,220	2,220
Utah	Food Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	54,006	2	$9,502	43%	100%	$0.00	199	199
Utah	Food Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	70,616	15	$92,942	74%	100%	$0.03	205	205
Utah	Food Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	89,601	10	$47,674	3.2%	100%	$0.00	149	149
Utah	Food Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	53,744	10	$79,866	35%	100%	$0.05	163	163
Utah	Food Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	52,638	10	$62,146	35%	100%	$0.04	126	126
Utah	Food Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	64,805	10	$58,666	17%	100%	$0.02	251	251
Utah	Food Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	10,530	10	$56,673	17%	100%	$0.01	70	70
Utah	Food Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	44,426	10	$27,475	17%	100%	$0.03	1,004	1,004
Utah	Food Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	53,744	10	$41,207	17%	100%	$0.02	78	78
Utah	Food Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	61,998	20	$96,522	8.3%	100%	$0.02	2,447	2,447
Utah	Food Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	40,740	2	$61,549	75%	100%	$0.00	2,267	2,267
Utah	Food Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	83,834	10	$33,774	35%	100%	$0.07	3,464	3,464

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Food Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	24,235	10	$83,432	34%	100%	$0.00	1,950	1,950
Utah	Food Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	15,421	2	$32,976	65%	100%	$0.00	2,882	2,882
Utah	Food Mfg	Process Other	Facility Energy Management			Per Industry	Existing	30,225	2	$632	75%	100%	$0.00	23	23
Utah	Food Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	85,092	10	$41,539	34%	100%	$0.01	3,840	3,840
Utah	Food Mfg	Process Refrig	Cold Storage Retrofit			Per Industry	Existing	50,308	10	$12,267	39%	100%	$0.01	6,236	6,236
Utah	Food Mfg	Process Refrig	Cold Storage Tuneup			Per Industry	Existing	99,730	3	$38,575	66%	100%	$0.00	9,976	9,976
Utah	Food Mfg	Process Refrig	Food: Cooling and Storage			Per Industry	Existing	23,469	10	$37,040	15%	100%	$0.02	2,178	2,178
Utah	Food Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	98,691	3	$60,206	3.0%	100%	$0.00	379	379
Utah	Food Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	53,891	10	$25,459	21%	100%	$0.02	227	227
Utah	Food Mfg	Pumps	Facility Energy Management			Per Industry	Existing	66,975	2	$20,238	60%	100%	$0.00	594	594
Utah	Food Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	79,362	15	$39,304	74%	100%	$0.03	590	590
Utah	Food Mfg	Pumps	Motor rewinds			Per Industry	Existing	12,392	9	$74,689	5.2%	100%	$0.02	16	16
Utah	Food Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	4,530	12	$13,066	33%	100%	$0.01	3,563	3,563
Utah	Food Mfg	Pumps	Pump System Optimization			Per Industry	Existing	53,903	12	$33,224	15%	100%	$0.02	991	991
Utah	Food Mfg	Pumps	Synchronous Belts			Per Industry	Existing	87,884	10	$25,766	21%	100%	$0.02	124	124
Utah	Industrial Machinery	Fans	Facility Energy Management			Per Industry	Existing	11,782	2	$16,990	6.6%	100%	$0.00	55	55
Utah	Industrial Machinery	Fans	Fan Equipment Upgrade			Per Industry	Existing	32,607	10	$22,794	23%	100%	$0.01	3,649	3,649
Utah	Industrial Machinery	Fans	Fan System Optimization			Per Industry	Existing	90,278	10	$92,152	30%	100%	$0.02	1,050	1,050
Utah	Industrial Machinery	Fans	High Efficiency Motors			Per Industry	Existing	54,280	15	$84,848	76%	100%	$0.03	513	513
Utah	Industrial Machinery	Fans	Improved Controls - Fans			Per Industry	Existing	5,680	10	$44,524	34%	100%	$0.01	956	956
Utah	Industrial Machinery	Fans	Properly Sized Fans			Per Industry	Existing	94,992	10	$31,001	15%	100%	$0.01	721	721
Utah	Industrial Machinery	Fans	Synchronous Belts			Per Industry	Existing	93,533	10	$5,581	21%	100%	$0.02	108	108
Utah	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	93,831	15	$31,384	14%	100%	$0.01	596	596
Utah	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	4,436	15	$85,565	5.0%	100%	$0.01	704	704
Utah	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	74,572	20	$33,201	1.0%	100%	$0.01	316	316
Utah	Industrial Machinery	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	58,190	20	$77,733	6.5%	100%	$0.01	685	685
Utah	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	83,656	20	$73,406	2.5%	100%	$0.01	588	588
Utah	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	90,674	15	$61,380	45%	100%	$0.01	1,476	1,476

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	53,946	15	$28,182	20%	100%	$0.01	1,676	1,676
Utah	Industrial Machinery	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	14,678	15	$67,514	2.5%	100%	$0.00	1,735	1,735
Utah	Industrial Machinery	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	32,682	30	$85,932	4.0%	100%	$0.01	1,177	1,177
Utah	Industrial Machinery	Hvac	Improved Controls - HVAC			Per Industry	Existing	47,108	10	$85,900	33%	100%	$0.00	8,779	8,779
Utah	Industrial Machinery	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	15,459	10	$67,712	74%	100%	$0.00	4,670	4,670
Utah	Industrial Machinery	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	55,529	15	$36,601	0.0%	100%	$0.16	0.00	0.00
Utah	Industrial Machinery	Lighting	Facility Energy Management			Per Industry	Existing	75,232	2	$35,062	75%	100%	$0.00	1,291	1,291
Utah	Industrial Machinery	Lighting	Induction (High Bay)			Per Industry	Existing	6,070	20	$78,188	0.0%	100%	$2.82	0.00	0.00
Utah	Industrial Machinery	Lighting	LED (High Bay)			Per Industry	Existing	21,652	20	$31,260	2.1%	100%	$1.29	365	365
Utah	Industrial Machinery	Lighting	Lighting Controls			Per Industry	Existing	61,135	10	$47,735	28%	100%	$0.01	4,861	4,861
Utah	Industrial Machinery	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	9,911	15	$2,516	40%	100%	$0.24	7,803	7,803
Utah	Industrial Machinery	Lighting	Metal Halide (High Bay)			Per Industry	Existing	90,003	15	$82,488	0.0%	100%	$0.17	0.00	0.00
Utah	Industrial Machinery	Lighting	Screw Base CFL			Per Industry	Existing	62,802	4	$8,870	10%	100%	$0.00	7,851	7,851
Utah	Industrial Machinery	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	50,053	1	$88,155	0.0%	100%	$0.00	0.00	0.00
Utah	Industrial Machinery	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	4,922	1	$43,192	0.0%	100%	$0.00	0.00	0.00
Utah	Industrial Machinery	Lighting	Screw Base LED			Per Industry	Existing	63,729	12	$55,319	1.8%	100%	$0.01	1,397	1,397
Utah	Industrial Machinery	Lighting	T5 Linear Florescent			Per Industry	Existing	98,458	13	$25,229	11%	100%	$0.30	3,186	3,186
Utah	Industrial Machinery	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	50,349	13	$36,151	34%	100%	$0.06	7,728	7,728
Utah	Industrial Machinery	Lighting	T8 Linear Florescent			Per Industry	Existing	93,115	13	$8,305	0.0%	100%	$0.08	0.00	0.00
Utah	Industrial Machinery	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	14,740	13	$15,160	0.0%	100%	$0.08	0.00	0.00
Utah	Industrial Machinery	Motors Other	Facility Energy Management			Per Industry	Existing	10,915	2	$48,367	75%	100%	$0.00	1,782	1,782
Utah	Industrial Machinery	Motors Other	High Efficiency Motors			Per Industry	Existing	62,550	15	$10,881	75%	100%	$0.03	1,434	1,434
Utah	Industrial Machinery	Motors Other	Improved Controls - Motors			Per Industry	Existing	58,906	10	$51,506	34%	100%	$0.01	1,510	1,510
Utah	Industrial Machinery	Motors Other	Motors Other			Per Industry	Existing	95,910	15	$18,161	90%	100%	$0.00	920	920
Utah	Industrial Machinery	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	94,753	10	$58,547	6.7%	100%	$0.02	48	48
Utah	Industrial Machinery	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	92,378	11.2	$65,949	4.7%	100%	$0.03	63	63

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Industrial Machinery	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	86,998	8	$99,660	4.0%	100%	$0.01	28	28
Utah	Industrial Machinery	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	99,636	8	$71,159	4.0%	100%	$0.01	28	28
Utah	Industrial Machinery	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	54,111	9	$29,997	7.1%	100%	$0.02	54	54
Utah	Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	14,051	12	$13,951	10%	100%	$0.02	1,015	1,015
Utah	Industrial Machinery	Motors Other	Synchronous Belts			Per Industry	Existing	4,950	10	$561	21%	100%	$0.02	303	303
Utah	Industrial Machinery	Other	Bldg Improvements			Per Industry	Existing	41,935	15	$47,738	35%	100%	$0.01	3,434	3,434
Utah	Industrial Machinery	Other	Facility Energy Management			Per Industry	Existing	61,123	2	$18,023	75%	100%	$0.00	664	664
Utah	Industrial Machinery	Other	Transformers			Per Industry	Existing	48,371	30	$49,427	20%	100%	$0.02	153	153
Utah	Industrial Machinery	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	5,259	10	$17,998	26%	100%	$0.00	2,165	2,165
Utah	Industrial Machinery	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	3,732	10	$4,680	17%	100%	$0.00	1,803	1,803
Utah	Industrial Machinery	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	1,653	10	$52,761	30%	100%	$0.01	4,663	4,663
Utah	Industrial Machinery	Process Aircomp	Facility Energy Management			Per Industry	Existing	36,216	2	$19,595	42%	100%	$0.00	405	405
Utah	Industrial Machinery	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	58,044	15	$91,659	75%	100%	$0.03	431	431
Utah	Industrial Machinery	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	64,316	10	$4,523	3.2%	100%	$0.00	312	312
Utah	Industrial Machinery	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	35,676	10	$77,117	36%	100%	$0.05	342	342
Utah	Industrial Machinery	Process Aircomp	Outside Air Intake			Per Industry	Existing	27,183	10	$34,365	36%	100%	$0.04	266	266
Utah	Industrial Machinery	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	20,607	10	$45,826	17%	100%	$0.02	528	528
Utah	Industrial Machinery	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	46,563	10	$16,866	17%	100%	$0.01	148	148
Utah	Industrial Machinery	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	51,917	10	$5,749	17%	100%	$0.03	2,110	2,110
Utah	Industrial Machinery	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	35,676	10	$91,187	17%	100%	$0.02	163	163
Utah	Industrial Machinery	Process Cool	Equipment: Chillers			Per Industry	Existing	74,211	20	$16,844	8.0%	100%	$0.02	318	318
Utah	Industrial Machinery	Process Cool	Facility Energy Management			Per Industry	Existing	98,888	2	$8,348	75%	100%	$0.00	307	307
Utah	Industrial Machinery	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	99,972	10	$43,975	34%	100%	$0.07	451	451
Utah	Industrial Machinery	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	69,044	10	$14,046	36%	100%	$0.00	5,278	5,278
Utah	Industrial Machinery	Process Heat	Process Heat O&M			Per Industry	Existing	71,772	2	$35,006	70%	100%	$0.00	7,800	7,800
Utah	Industrial Machinery	Process Other	Facility Energy Management			Per Industry	Existing	66,316	2	$1,388	75%	100%	$0.00	51	51
Utah	Industrial Machinery	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	15,817	10	$98,849	34%	100%	$0.01	879	879
Utah	Industrial Machinery	Process Refrig	Optimization of operating parameters			Per Industry	Existing	16,659	3	$74,103	85%	100%	$0.00	2,461	2,461
Utah	Industrial Machinery	Process Refrig	Synchronous Belts			Per Industry	Existing	41,363	10	$51,634	21%	100%	$0.02	52	52
Utah	Industrial Machinery	Pumps	Facility Energy Management			Per Industry	Existing	69,504	2	$30,756	75%	100%	$0.00	1,133	1,133

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Industrial Machinery	Pumps	High Efficiency Motors			Per Industry	Existing	84,391	15	$15,637	76%	100%	$0.03	919	919
Utah	Industrial Machinery	Pumps	Motor rewinds			Per Industry	Existing	74,740	9	$13,504	5.3%	100%	$0.02	26	26
Utah	Industrial Machinery	Pumps	Synchronous Belts			Per Industry	Existing	93,404	10	$91,126	21%	100%	$0.02	194	194
Utah	Lumber Wood Products	Fans	Efficient Centrifugal Fan			Per Industry	Existing	90,425	10	$25,531	11%	100%	$0.01	560	560
Utah	Lumber Wood Products	Fans	Facility Energy Management			Per Industry	Existing	68,589	2	$9,807	3.0%	100%	$0.00	14	14
Utah	Lumber Wood Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	8,243	10	$63,563	23%	100%	$0.01	2,106	2,106
Utah	Lumber Wood Products	Fans	Fan System Optimization			Per Industry	Existing	56,988	10	$99,534	30%	100%	$0.02	607	607
Utah	Lumber Wood Products	Fans	High Efficiency Motors			Per Industry	Existing	77,673	15	$64,424	77%	100%	$0.03	297	297
Utah	Lumber Wood Products	Fans	Improved Controls - Fans			Per Industry	Existing	61,813	10	$41,147	34%	100%	$0.01	552	552
Utah	Lumber Wood Products	Fans	Properly Sized Fans			Per Industry	Existing	52,391	10	$21,959	15%	100%	$0.01	417	417
Utah	Lumber Wood Products	Fans	Synchronous Belts			Per Industry	Existing	84,885	10	$60,945	21%	100%	$0.02	62	62
Utah	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	12,195	15	$90,019	14%	100%	$0.01	84	84
Utah	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	53,918	15	$83,290	5.0%	100%	$0.01	100	100
Utah	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	87,704	20	$89,293	1.0%	100%	$0.01	45	45
Utah	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	62,568	20	$96,431	6.5%	100%	$0.01	97	97
Utah	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	62,651	20	$38,192	2.5%	100%	$0.01	83	83
Utah	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	54,912	15	$65,781	45%	100%	$0.01	210	210
Utah	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	62,554	15	$32,336	20%	100%	$0.01	239	239
Utah	Lumber Wood Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	25,948	15	$9,625	2.5%	100%	$0.00	247	247
Utah	Lumber Wood Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	82,322	30	$82,948	4.0%	100%	$0.01	167	167

Table C-2.3. Industrial Measure Details

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Utah	Lumber Wood Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	42,395	10	$83,338	33%	100%	$0.00	1,228	1,228
Utah	Lumber Wood Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	71,915	10	$23,911	73%	100%	$0.00	653	653
Utah	Lumber Wood Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	74,418	15	$33,731	0.0%	100%	$0.16	0.00	0.00
Utah	Lumber Wood Products	Lighting	Facility Energy Management			Per Industry	Existing	39,834	2	$7,112	75%	100%	$0.00	262	262
Utah	Lumber Wood Products	Lighting	Induction (High Bay)			Per Industry	Existing	35,806	20	$92,559	0.0%	100%	$2.82	0.00	0.00
Utah	Lumber Wood Products	Lighting	LED (High Bay)			Per Industry	Existing	12,404	20	$25,675	2.1%	100%	$1.29	74	74
Utah	Lumber Wood Products	Lighting	Lighting Controls			Per Industry	Existing	127	10	$35,685	28%	100%	$0.01	986	986
Utah	Lumber Wood Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	36,023	15	$61,978	40%	100%	$0.24	1,582	1,582
Utah	Lumber Wood Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	48,265	15	$79,605	0.0%	100%	$0.17	0.00	0.00
Utah	Lumber Wood Products	Lighting	Screw Base CFL			Per Industry	Existing	1,076	4	$6,086	10%	100%	$0.00	1,592	1,592
Utah	Lumber Wood Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	52,484	1	$41,026	0.0%	100%	$0.00	0.00	0.00
Utah	Lumber Wood Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	71,296	1	$11,619	0.0%	100%	$0.00	0.00	0.00
Utah	Lumber Wood Products	Lighting	Screw Base LED			Per Industry	Existing	22,979	12	$6,373	1.8%	100%	$0.01	283	283
Utah	Lumber Wood Products	Lighting	T5 Linear Florescent			Per Industry	Existing	57,992	13	$77,761	11%	100%	$0.30	646	646
Utah	Lumber Wood Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	93,372	13	$37,060	34%	100%	$0.06	1,567	1,567
Utah	Lumber Wood Products	Lighting	T8 Linear Florescent			Per Industry	Existing	67,472	13	$67,696	0.0%	100%	$0.08	0.00	0.00
Utah	Lumber Wood Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	48,434	13	$68,805	0.0%	100%	$0.08	0.00	0.00
Utah	Lumber Wood Products	Motors Other	Facility Energy Management			Per Industry	Existing	33,941	2	$27,919	75%	100%	$0.00	1,028	1,028
Utah	Lumber Wood Products	Motors Other	High Efficiency Motors			Per Industry	Existing	75,129	15	$68,069	75%	100%	$0.03	831	831
Utah	Lumber Wood Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	16,113	10	$60,625	34%	100%	$0.01	876	876
Utah	Lumber Wood Products	Motors Other	Material Handling			Per Industry	Existing	29,675	10	$96,109	53%	100%	$0.04	1,984	1,984

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Utah	Lumber Wood Products	Motors Other	Material Handling VFD			Per Industry	Existing	68,878	10	$70,663	53%	100%	$0.02	7,419	7,419
Utah	Lumber Wood Products	Motors Other	Motors Other			Per Industry	Existing	74,874	15	$10,483	90%	100%	$0.00	533	533
Utah	Lumber Wood Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,036	10	$91,519	6.8%	100%	$0.02	27	27
Utah	Lumber Wood Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	46,006	11.2	$68,962	4.7%	100%	$0.03	36	36
Utah	Lumber Wood Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	96,559	8	$57,527	4.0%	100%	$0.01	16	16
Utah	Lumber Wood Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	3,855	8	$41,075	4.0%	100%	$0.01	16	16
Utah	Lumber Wood Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	35,299	9	$32,762	7.1%	100%	$0.02	31	31
Utah	Lumber Wood Products	Motors Other	Panel: Hydraulic Press			Per Industry	Existing	87,387	10	$68,221	28%	100%	$0.02	5,841	5,841
Utah	Lumber Wood Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	34,121	12	$62,523	11%	100%	$0.02	588	588
Utah	Lumber Wood Products	Motors Other	Synchronous Belts			Per Industry	Existing	10,986	10	$73,494	21%	100%	$0.02	175	175
Utah	Lumber Wood Products	Motors Other	Wood: Replace Pneumatic Conveyor			Per Industry	Existing	11,937	10	$4,673	50%	100%	$0.00	10,839	10,839
Utah	Lumber Wood Products	Other	Bldg Improvements			Per Industry	Existing	98,173	15	$35,892	35%	100%	$0.01	1,474	1,474
Utah	Lumber Wood Products	Other	Facility Energy Management			Per Industry	Existing	69,844	2	$7,740	75%	100%	$0.00	285	285
Utah	Lumber Wood Products	Other	Transformers			Per Industry	Existing	21,418	30	$64,177	20%	100%	$0.02	66	66
Utah	Lumber Wood Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	78,640	10	$41,283	27%	100%	$0.00	1,290	1,290
Utah	Lumber Wood Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	47,676	10	$33,595	18%	100%	$0.00	1,074	1,074
Utah	Lumber Wood Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	32,652	10	$54,032	31%	100%	$0.01	2,779	2,779
Utah	Lumber Wood Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	40,417	2	$11,310	41%	100%	$0.00	228	228
Utah	Lumber Wood Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	22,122	15	$10,632	78%	100%	$0.03	256	256
Utah	Lumber Wood Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	63,136	10	$75,781	3.3%	100%	$0.00	186	186
Utah	Lumber Wood Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	40,105	10	$33,132	37%	100%	$0.05	204	204

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Utah	Lumber Wood Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	19,755	10	$93,007	37%	100%	$0.04	158	158
Utah	Lumber Wood Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	43,600	10	$45,964	18%	100%	$0.02	315	315
Utah	Lumber Wood Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	88,666	10	$67,459	18%	100%	$0.01	88	88
Utah	Lumber Wood Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	56,790	10	$89,494	18%	100%	$0.03	1,257	1,257
Utah	Lumber Wood Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	40,105	10	$68,083	18%	100%	$0.02	97	97
Utah	Lumber Wood Products	Process Cool	Equipment: Chillers			Per Industry	Existing	91,480	20	$76,503	7.7%	100%	$0.02	22	22
Utah	Lumber Wood Products	Process Cool	Facility Energy Management			Per Industry	Existing	30,010	2	$628	75%	100%	$0.00	23	23
Utah	Lumber Wood Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	97,804	10	$86,068	32%	100%	$0.07	32	32
Utah	Lumber Wood Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	86,120	10	$95,840	33%	100%	$0.00	1,316	1,316
Utah	Lumber Wood Products	Process Heat	Process Heat O&M			Per Industry	Existing	81,783	2	$91,881	63%	100%	$0.00	1,944	1,944
Utah	Lumber Wood Products	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Lumber Wood Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	52,218	10	$30,229	34%	100%	$0.01	507	507
Utah	Lumber Wood Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	25,874	3	$498	85%	100%	$0.00	1,421	1,421
Utah	Lumber Wood Products	Process Refrig	Synchronous Belts			Per Industry	Existing	39,323	10	$29,805	21%	100%	$0.02	30	30
Utah	Lumber Wood Products	Pumps	Facility Energy Management			Per Industry	Existing	48,249	2	$17,753	75%	100%	$0.00	654	654
Utah	Lumber Wood Products	Pumps	High Efficiency Motors			Per Industry	Existing	83,672	15	$97,644	72%	100%	$0.03	507	507
Utah	Lumber Wood Products	Pumps	Motor rewinds			Per Industry	Existing	74,037	9	$65,518	5.1%	100%	$0.02	14	14
Utah	Lumber Wood Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	14,784	12	$51,848	32%	100%	$0.01	3,060	3,060
Utah	Lumber Wood Products	Pumps	Pump System Optimization			Per Industry	Existing	73,770	12	$32,696	75%	100%	$0.02	4,298	4,298
Utah	Lumber Wood Products	Pumps	Synchronous Belts			Per Industry	Existing	15,704	10	$10,324	20%	100%	$0.02	107	107
Utah	Metal Mfg	Fans	Facility Energy Management			Per Industry	Existing	45,305	2	$17,692	27%	100%	$0.00	236	236
Utah	Metal Mfg	Fans	High Efficiency Motors			Per Industry	Existing	81,299	15	$96,611	73%	100%	$0.03	514	514
Utah	Metal Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	17,411	10	$54,621	33%	100%	$0.01	957	957

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Utah	Metal Mfg	Fans	Properly Sized Fans			Per Industry	Existing	84,742	10	$61,187	15%	100%	$0.01	722	722
Utah	Metal Mfg	Fans	Synchronous Belts			Per Industry	Existing	13,914	10	$9,941	21%	100%	$0.02	108	108
Utah	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	3,285	15	$76,936	14%	100%	$0.01	167	167
Utah	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	40,474	15	$60,261	5.0%	100%	$0.01	197	197
Utah	Metal Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	24,139	20	$58,271	1.0%	100%	$0.01	88	88
Utah	Metal Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	74,713	20	$86,090	6.5%	100%	$0.01	192	192
Utah	Metal Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	12,821	20	$61,278	2.5%	100%	$0.01	164	164
Utah	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	94,141	15	$29,295	45%	100%	$0.01	413	413
Utah	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	85,028	15	$60,109	20%	100%	$0.01	469	469
Utah	Metal Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	20,034	15	$18,920	2.5%	100%	$0.00	486	486
Utah	Metal Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	23,904	30	$52,694	4.0%	100%	$0.01	330	330
Utah	Metal Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	59,216	10	$60,355	34%	100%	$0.00	2,473	2,473
Utah	Metal Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	13,771	10	$46,999	75%	100%	$0.00	1,315	1,315
Utah	Metal Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	73,268	15	$24,068	0.0%	100%	$0.16	0.00	0.00
Utah	Metal Mfg	Lighting	Facility Energy Management			Per Industry	Existing	5,511	2	$10,580	75%	100%	$0.00	389	389
Utah	Metal Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	40,786	20	$81,036	0.0%	100%	$2.82	0.00	0.00
Utah	Metal Mfg	Lighting	LED (High Bay)			Per Industry	Existing	76,030	20	$98,230	2.1%	100%	$1.29	110	110
Utah	Metal Mfg	Lighting	Lighting Controls			Per Industry	Existing	57,769	10	$48,091	28%	100%	$0.01	1,466	1,466
Utah	Metal Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	6,174	15	$49,960	40%	100%	$0.24	2,354	2,354
Utah	Metal Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	95,594	15	$63,518	0.0%	100%	$0.17	0.00	0.00
Utah	Metal Mfg	Lighting	Screw Base CFL			Per Industry	Existing	16,946	4	$55,310	10%	100%	$0.00	2,369	2,369
Utah	Metal Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	67,121	1	$58,532	0.0%	100%	$0.00	0.00	0.00
Utah	Metal Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	12,386	1	$14,789	0.0%	100%	$0.00	0.00	0.00
Utah	Metal Mfg	Lighting	Screw Base LED			Per Industry	Existing	98,279	12	$28,289	1.8%	100%	$0.01	421	421
Utah	Metal Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	67,642	13	$7,403	11%	100%	$0.30	961	961
Utah	Metal Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	83,995	13	$61,459	34%	100%	$0.06	2,332	2,332
Utah	Metal Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	57,946	13	$60,774	0.0%	100%	$0.08	0.00	0.00

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Utah	Metal Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	14,655	13	$44,957	0.0%	100%	$0.08	0.00	0.00
Utah	Metal Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	3,321	2	$71,231	75%	100%	$0.00	2,624	2,624
Utah	Metal Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	43,007	15	$94,198	74%	100%	$0.03	2,090	2,090
Utah	Metal Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	19,430	10	$64,940	33%	100%	$0.01	2,201	2,201
Utah	Metal Mfg	Motors Other	Motors Other			Per Industry	Existing	66,693	15	$26,747	89%	100%	$0.00	1,341	1,341
Utah	Metal Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	23,174	10	$33,495	6.7%	100%	$0.02	70	70
Utah	Metal Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	3,306	11.2	$86,210	4.6%	100%	$0.03	91	91
Utah	Metal Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	11,753	8	$46,771	3.9%	100%	$0.01	41	41
Utah	Metal Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	30,366	8	$4,797	3.9%	100%	$0.01	41	41
Utah	Metal Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	10,591	9	$38,721	7.0%	100%	$0.02	79	79
Utah	Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	64,224	12	$65,978	10%	100%	$0.02	1,479	1,479
Utah	Metal Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	69,092	10	$42,641	21%	100%	$0.02	441	441
Utah	Metal Mfg	Other	Bldg Improvements			Per Industry	Existing	7,116	15	$27,839	35%	100%	$0.01	902	902
Utah	Metal Mfg	Other	Facility Energy Management			Per Industry	Existing	26,257	2	$4,735	75%	100%	$0.00	174	174
Utah	Metal Mfg	Other	Transformers			Per Industry	Existing	96,632	30	$39,261	20%	100%	$0.02	40	40
Utah	Metal Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	39,884	10	$52,741	25%	100%	$0.00	1,777	1,777
Utah	Metal Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	95,136	10	$41,502	17%	100%	$0.00	1,480	1,480
Utah	Metal Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	12,792	10	$94,736	29%	100%	$0.01	3,828	3,828
Utah	Metal Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	90,056	2	$16,535	43%	100%	$0.00	349	349
Utah	Metal Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	70,923	15	$61,737	73%	100%	$0.03	353	353
Utah	Metal Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	86,768	10	$56,981	3.1%	100%	$0.00	256	256
Utah	Metal Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	89,600	10	$87,019	35%	100%	$0.05	281	281
Utah	Metal Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	13,656	10	$82,165	35%	100%	$0.04	218	218
Utah	Metal Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	49,036	10	$98,166	17%	100%	$0.02	434	434
Utah	Metal Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	14,400	10	$98,621	17%	100%	$0.01	121	121
Utah	Metal Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	70,398	10	$24,262	17%	100%	$0.03	1,731	1,731
Utah	Metal Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	89,600	10	$45,727	17%	100%	$0.02	134	134
Utah	Metal Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	66,664	20	$58,701	8.0%	100%	$0.02	112	112
Utah	Metal Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	40,711	2	$2,945	75%	100%	$0.00	108	108
Utah	Metal Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	58,577	10	$3,548	34%	100%	$0.07	159	159
Utah	Metal Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	59,019	10	$97,704	35%	100%	$0.00	27,018	27,018

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Metal Mfg	Process Heat	Metal: New Arc Furnace			Per Industry	Existing	92,453	10	$93,954	7.3%	100%	$0.01	8,885	8,885
Utah	Metal Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	22,256	2	$81,754	67%	100%	$0.00	39,926	39,926
Utah	Metal Mfg	Process Other	Facility Energy Management			Per Industry	Existing	23,185	2	$485	75%	100%	$0.00	17	17
Utah	Metal Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	35,011	10	$5,550	34%	100%	$0.01	12	12
Utah	Metal Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	39,197	3	$2,422	85%	100%	$0.00	34	34
Utah	Metal Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	3,358	10	$718	21%	100%	$0.02	0.72	0.72
Utah	Metal Mfg	Pumps	Facility Energy Management			Per Industry	Existing	80,663	2	$10,060	75%	100%	$0.00	370	370
Utah	Metal Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	87,405	15	$68,661	72%	100%	$0.03	287	287
Utah	Metal Mfg	Pumps	Motor rewinds			Per Industry	Existing	55,284	9	$37,126	5.1%	100%	$0.02	8	8
Utah	Metal Mfg	Pumps	Synchronous Belts			Per Industry	Existing	92,225	10	$62,515	20%	100%	$0.02	60	60
Utah	Mining	Motors Other	High Efficiency Motors			Per Industry	Existing	10,250	15	$16,628	25%	100%	$0.03	1,545	1,545
Utah	Mining	Motors Other	Improved Controls - Motors			Per Industry	Existing	65,721	10	$56,962	0.0%	100%	$0.01	0.00	0.00
Utah	Mining	Motors Other	Material Handling			Per Industry	Existing	90,813	10	$81,688	25%	100%	$0.04	5,216	5,216
Utah	Mining	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Utah	Mining	Motors Other	Motors Other			Per Industry	Existing	13,695	15	$58,606	25%	100%	$0.00	826	826
Utah	Mining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	41,895	10	$11,615	6.7%	100%	$0.02	155	155
Utah	Mining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	70,365	11.2	$3,567	4.7%	100%	$0.03	203	203
Utah	Mining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	16,869	8	$21,593	4.0%	100%	$0.01	91	91
Utah	Mining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	57,653	8	$29,623	4.0%	100%	$0.01	92	92
Utah	Mining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	33,435	9	$42,177	7.1%	100%	$0.02	176	176
Utah	Mining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	78,132	12	$98,804	0.0%	100%	$0.02	0.00	0.00
Utah	Mining	Motors Other	Synchronous Belts			Per Industry	Existing	33,623	10	$69,879	0.0%	100%	$0.02	0.00	0.00
Utah	Mining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
Utah	Miscellaneous Mfg	Fans	Facility Energy Management			Per Industry	Existing	4,919	2	$25,218	5.5%	100%	$0.00	68	68
Utah	Miscellaneous Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	6,438	10	$63,409	23%	100%	$0.01	5,417	5,417
Utah	Miscellaneous Mfg	Fans	Fan System Optimization			Per Industry	Existing	32,151	10	$27,353	30%	100%	$0.02	1,559	1,559
Utah	Miscellaneous Mfg	Fans	High Efficiency Motors			Per Industry	Existing	71,140	15	$22,796	76%	100%	$0.03	762	762
Utah	Miscellaneous Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	16,009	10	$62,944	34%	100%	$0.01	1,419	1,419
Utah	Miscellaneous Mfg	Fans	Properly Sized Fans			Per Industry	Existing	20,293	10	$85,016	15%	100%	$0.01	1,071	1,071
Utah	Miscellaneous Mfg	Fans	Synchronous Belts			Per Industry	Existing	32,546	10	$56,713	21%	100%	$0.02	161	161
Utah	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	97,521	15	$34,808	14%	100%	$0.01	1,165	1,165

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	2,006	15	$14,203	5.0%	100%	$0.01	1,377	1,377
Utah	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	86,372	20	$83,375	1.0%	100%	$0.01	618	618
Utah	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	62,124	20	$94,458	6.5%	100%	$0.01	1,340	1,340
Utah	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	53,969	20	$10,714	2.5%	100%	$0.01	1,150	1,150
Utah	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	40,058	15	$2,329	45%	100%	$0.01	2,887	2,887
Utah	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	46,816	15	$15,262	20%	100%	$0.01	3,279	3,279
Utah	Miscellaneous Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	39,642	15	$32,039	2.5%	100%	$0.00	3,394	3,394
Utah	Miscellaneous Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	97,440	30	$52,925	4.0%	100%	$0.01	2,303	2,303
Utah	Miscellaneous Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	62,927	10	$14,857	33%	100%	$0.00	17,169	17,169
Utah	Miscellaneous Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	60,112	10	$27,998	74%	100%	$0.00	9,133	9,133
Utah	Miscellaneous Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	55,549	15	$70,808	0.0%	100%	$0.16	0.00	0.00
Utah	Miscellaneous Mfg	Lighting	Facility Energy Management			Per Industry	Existing	56,417	2	$66,063	75%	100%	$0.00	2,434	2,434
Utah	Miscellaneous Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	20,689	20	$4,726	0.0%	100%	$2.82	0.00	0.00
Utah	Miscellaneous Mfg	Lighting	LED (High Bay)			Per Industry	Existing	94,803	20	$71,260	2.1%	100%	$1.29	688	688
Utah	Miscellaneous Mfg	Lighting	Lighting Controls			Per Industry	Existing	80,780	10	$46,693	28%	100%	$0.01	9,159	9,159
Utah	Miscellaneous Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	29,431	15	$60,180	40%	100%	$0.24	14,702	14,702
Utah	Miscellaneous Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	53,336	15	$7,097	0.0%	100%	$0.17	0.00	0.00
Utah	Miscellaneous Mfg	Lighting	Screw Base CFL			Per Industry	Existing	74,109	4	$42,965	10%	100%	$0.00	14,794	14,794
Utah	Miscellaneous Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	4,168	1	$38,684	0.0%	100%	$0.00	0.00	0.00
Utah	Miscellaneous Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	70,614	1	$65,548	0.0%	100%	$0.00	0.00	0.00
Utah	Miscellaneous Mfg	Lighting	Screw Base LED			Per Industry	Existing	6,355	12	$79,487	1.8%	100%	$0.01	2,632	2,632
Utah	Miscellaneous Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	23,273	13	$86,244	11%	100%	$0.30	6,004	6,004
Utah	Miscellaneous Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	34,959	13	$52,622	34%	100%	$0.06	14,562	14,562
Utah	Miscellaneous Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	6,284	13	$50,739	0.0%	100%	$0.08	0.00	0.00

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Utah	Miscellaneous Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	75,200	13	$64,407	0.0%	100%	$0.08	0.00	0.00
Utah	Miscellaneous Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	51,180	2	$1,535	75%	100%	$0.00	3,741	3,741
Utah	Miscellaneous Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	9,953	15	$2,241	75%	100%	$0.03	3,011	3,011
Utah	Miscellaneous Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	50,419	10	$47,823	34%	100%	$0.01	3,171	3,171
Utah	Miscellaneous Mfg	Motors Other	Motors Other			Per Industry	Existing	90,661	15	$38,126	90%	100%	$0.00	1,932	1,932
Utah	Miscellaneous Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	58,459	10	$32,830	6.7%	100%	$0.02	101	101
Utah	Miscellaneous Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	13,021	11.2	$78,142	4.7%	100%	$0.03	132	132
Utah	Miscellaneous Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	42,178	8	$9,211	4.0%	100%	$0.01	59	59
Utah	Miscellaneous Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	68,710	8	$49,380	4.0%	100%	$0.01	60	60
Utah	Miscellaneous Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	83,065	9	$82,821	7.1%	100%	$0.02	114	114
Utah	Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	62,417	12	$27,780	10%	100%	$0.02	2,131	2,131
Utah	Miscellaneous Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	49,337	10	$30,952	21%	100%	$0.02	636	636
Utah	Miscellaneous Mfg	Other	Bldg Improvements			Per Industry	Existing	92,492	15	$32,808	35%	100%	$0.01	3,668	3,668
Utah	Miscellaneous Mfg	Other	Facility Energy Management			Per Industry	Existing	19,834	2	$19,252	75%	100%	$0.00	709	709
Utah	Miscellaneous Mfg	Other	Transformers			Per Industry	Existing	99,394	30	$59,615	20%	100%	$0.02	164	164
Utah	Miscellaneous Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	49,745	10	$2,806	26%	100%	$0.00	2,604	2,604
Utah	Miscellaneous Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	26,167	2	$23,570	72%	100%	$0.00	831	831
Utah	Miscellaneous Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	71,266	15	$30,545	75%	100%	$0.03	518	518
Utah	Miscellaneous Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	84,542	10	$66,308	3.2%	100%	$0.00	376	376
Utah	Miscellaneous Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	25,516	10	$94,210	36%	100%	$0.05	412	412
Utah	Miscellaneous Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	74,722	10	$2,205	36%	100%	$0.04	320	320
Utah	Miscellaneous Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	33,461	10	$37,726	17%	100%	$0.02	636	636
Utah	Miscellaneous Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	18,324	10	$40,578	17%	100%	$0.01	178	178
Utah	Miscellaneous Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	97,144	10	$21,371	17%	100%	$0.03	2,538	2,538
Utah	Miscellaneous Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	25,516	10	$50,266	17%	100%	$0.02	197	197
Utah	Miscellaneous Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	64,582	20	$97,762	8.0%	100%	$0.02	1,033	1,033
Utah	Miscellaneous Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	93,648	2	$27,076	75%	100%	$0.00	997	997
Utah	Miscellaneous Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	15,982	10	$10,064	34%	100%	$0.07	1,463	1,463
Utah	Miscellaneous Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	43,037	10	$74,487	36%	100%	$0.00	11,639	11,639
Utah	Miscellaneous Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	72,484	2	$38,696	70%	100%	$0.00	17,200	17,200

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Utah	Miscellaneous Mfg	Process Other	Facility Energy Management			Per Industry	Existing	94,503	2	$1,977	75%	100%	$0.00	72	72
Utah	Miscellaneous Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	49,905	10	$7,911	34%	100%	$0.01	17	17
Utah	Miscellaneous Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	55,873	3	$3,453	85%	100%	$0.00	48	48
Utah	Miscellaneous Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	4,787	10	$1,024	21%	100%	$0.02	1	1
Utah	Miscellaneous Mfg	Pumps	Facility Energy Management			Per Industry	Existing	85,150	2	$14,340	60%	100%	$0.00	419	419
Utah	Miscellaneous Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	52,217	15	$40,413	76%	100%	$0.03	428	428
Utah	Miscellaneous Mfg	Pumps	Motor rewinds			Per Industry	Existing	21,345	9	$52,920	5.3%	100%	$0.02	12	12
Utah	Miscellaneous Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	42,988	12	$30,373	34%	100%	$0.01	2,586	2,586
Utah	Miscellaneous Mfg	Pumps	Pump System Optimization			Per Industry	Existing	2,060	12	$57,221	16%	100%	$0.02	719	719
Utah	Miscellaneous Mfg	Pumps	Synchronous Belts			Per Industry	Existing	16,546	10	$89,111	21%	100%	$0.02	90	90
Utah	Paper Mfg	Fans	Efficient Centrifugal Fan			Per Industry	Existing	19,617	10	$85,384	8.5%	100%	$0.01	377	377
Utah	Paper Mfg	Fans	Facility Energy Management			Per Industry	Existing	97,634	2	$8,322	12%	100%	$0.00	47	47
Utah	Paper Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	59,329	10	$47,942	14%	100%	$0.01	1,081	1,081
Utah	Paper Mfg	Fans	Fan System Optimization			Per Industry	Existing	60,654	10	$39,035	24%	100%	$0.02	409	409
Utah	Paper Mfg	Fans	High Efficiency Motors			Per Industry	Existing	20,485	15	$39,526	61%	100%	$0.03	200	200
Utah	Paper Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	25,319	10	$19,774	27%	100%	$0.01	372	372
Utah	Paper Mfg	Fans	Paper: Premium Fan			Per Industry	Existing	19,617	10	$85,384	20%	100%	$0.01	899	899
Utah	Paper Mfg	Fans	Properly Sized Fans			Per Industry	Existing	50,757	10	$58,065	12%	100%	$0.01	281	281
Utah	Paper Mfg	Fans	Synchronous Belts			Per Industry	Existing	41,746	10	$51,716	17%	100%	$0.02	42	42
Utah	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	92,676	15	$28,332	14%	100%	$0.01	26	26
Utah	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	14,957	15	$57,687	5.0%	100%	$0.01	31	31
Utah	Paper Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	80,943	20	$85,468	1.0%	100%	$0.01	14	14
Utah	Paper Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	60,314	20	$61,822	6.5%	100%	$0.01	30	30
Utah	Paper Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	26,855	20	$37,912	2.5%	100%	$0.01	26	26
Utah	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	43,174	15	$20,703	45%	100%	$0.01	66	66
Utah	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	65,890	15	$41,650	20%	100%	$0.01	75	75
Utah	Paper Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	29,577	15	$3,029	2.5%	100%	$0.00	77	77

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Utah	Paper Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	84,830	30	$20,525	4.0%	100%	$0.01	52	52
Utah	Paper Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	46,371	10	$57,702	32%	100%	$0.00	381	381
Utah	Paper Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	74,418	10	$7,525	72%	100%	$0.00	203	203
Utah	Paper Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	85,562	15	$66,774	0.0%	100%	$0.16	0.00	0.00
Utah	Paper Mfg	Lighting	Facility Energy Management			Per Industry	Existing	97,886	2	$2,048	75%	100%	$0.00	75	75
Utah	Paper Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	98,356	20	$69,013	0.0%	100%	$2.82	0.00	0.00
Utah	Paper Mfg	Lighting	LED (High Bay)			Per Industry	Existing	82,917	20	$36,140	2.1%	100%	$1.29	21	21
Utah	Paper Mfg	Lighting	Lighting Controls			Per Industry	Existing	79,381	10	$25,495	28%	100%	$0.01	284	284
Utah	Paper Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	4,937	15	$1,535	40%	100%	$0.24	455	455
Utah	Paper Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	18,791	15	$90,316	0.0%	100%	$0.17	0.00	0.00
Utah	Paper Mfg	Lighting	Screw Base CFL			Per Industry	Existing	63,337	4	$88,165	10%	100%	$0.00	458	458
Utah	Paper Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	30,864	1	$69,425	0.0%	100%	$0.00	0.00	0.00
Utah	Paper Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	28,684	1	$60,955	0.0%	100%	$0.00	0.00	0.00
Utah	Paper Mfg	Lighting	Screw Base LED			Per Industry	Existing	98,450	12	$21,941	1.8%	100%	$0.01	81	81
Utah	Paper Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	937	13	$84,876	11%	100%	$0.30	186	186
Utah	Paper Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	94,281	13	$18,823	34%	100%	$0.06	451	451
Utah	Paper Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	98,779	13	$41,235	0.0%	100%	$0.08	0.00	0.00
Utah	Paper Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	38,946	13	$44,814	0.0%	100%	$0.08	0.00	0.00
Utah	Paper Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	87,235	2	$16,476	75%	100%	$0.00	607	607
Utah	Paper Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	34,495	15	$76,234	60%	100%	$0.03	390	390
Utah	Paper Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	84,903	10	$53,810	27%	100%	$0.01	411	411
Utah	Paper Mfg	Motors Other	Material Handling			Per Industry	Existing	42,080	10	$972	42%	100%	$0.04	931	931
Utah	Paper Mfg	Motors Other	Material Handling VFD			Per Industry	Existing	7,777	10	$2,333	42%	100%	$0.02	3,483	3,483
Utah	Paper Mfg	Motors Other	Motors Other			Per Industry	Existing	39,266	15	$6,186	72%	100%	$0.00	250	250
Utah	Paper Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	36,674	10	$54,010	5.4%	100%	$0.02	13	13
Utah	Paper Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	40,261	11.2	$58,730	3.8%	100%	$0.03	17	17
Utah	Paper Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	34,032	8	$33,950	3.2%	100%	$0.01	7	7
Utah	Paper Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	38,338	8	$24,241	3.2%	100%	$0.01	7	7
Utah	Paper Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	56,895	9	$78,350	5.6%	100%	$0.02	14	14
Utah	Paper Mfg	Motors Other	Paper: Large Material Handling			Per Industry	Existing	64,044	10	$3,110	20%	100%	$0.06	854	854
Utah	Paper Mfg	Motors Other	Paper: Material Handling			Per Industry	Existing	5,444	10	$3,499	20%	100%	$0.05	1,150	1,150

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Paper Mfg	Motors Other	Paper: Premium Control Large Material			Per Industry	Existing	7,777	10	$23,422	20%	100%	$0.04	1,642	1,642
Utah	Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	6,988	12	$86,072	8.4%	100%	$0.02	276	276
Utah	Paper Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	78,609	10	$2,389	17%	100%	$0.02	82	82
Utah	Paper Mfg	Other	Bldg Improvements			Per Industry	Existing	78,997	15	$75,711	35%	100%	$0.01	208	208
Utah	Paper Mfg	Other	Facility Energy Management			Per Industry	Existing	52,252	2	$1,093	75%	100%	$0.00	40	40
Utah	Paper Mfg	Other	Transformers			Per Industry	Existing	45,410	30	$9,067	20%	100%	$0.02	9	9
Utah	Paper Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	99,773	10	$41,245	20%	100%	$0.00	168	168
Utah	Paper Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	16,704	10	$39,931	13%	100%	$0.00	135	135
Utah	Paper Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	9,866	10	$63,083	23%	100%	$0.01	349	349
Utah	Paper Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	92,379	2	$1,933	50%	100%	$0.00	47	47
Utah	Paper Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	55,064	15	$18,911	59%	100%	$0.03	33	33
Utah	Paper Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	33,876	10	$30,048	2.4%	100%	$0.00	23	23
Utah	Paper Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	92,326	10	$56,946	27%	100%	$0.05	25	25
Utah	Paper Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	71,753	10	$32,992	27%	100%	$0.04	19	19
Utah	Paper Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	98,053	10	$93,327	13%	100%	$0.02	39	39
Utah	Paper Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	83,533	10	$11,531	13%	100%	$0.01	11	11
Utah	Paper Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	89,203	10	$93,934	13%	100%	$0.03	158	158
Utah	Paper Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	92,326	10	$28,732	13%	100%	$0.02	12	12
Utah	Paper Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	61,300	20	$94,828	8.0%	100%	$0.02	29	29
Utah	Paper Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	37,199	2	$778	75%	100%	$0.00	28	28
Utah	Paper Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	21,232	10	$6,684	34%	100%	$0.07	42	42
Utah	Paper Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	64,254	10	$48,593	33%	100%	$0.00	328	328
Utah	Paper Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	39,863	2	$22,798	64%	100%	$0.00	485	485
Utah	Paper Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Other	Kraft: Efficient Agitator			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Other	Kraft: Effluent Treatment System			Per Industry	Existing	0.00	10	$0.00	7.3%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Other	Mech Pulp: Premium Process			Per Industry	Existing	0.00	5	$0.00	18%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement			Per Industry	Existing	0.00	1	$0.00	28%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Other	Paper: Efficient Pulp Screen			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Utah	Paper Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	36,317	10	$879	27%	100%	$0.01	176	176
Utah	Paper Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	12,408	3	$44,035	67%	100%	$0.00	493	493

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Paper Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	61,047	10	$13,059	17%	100%	$0.02	10	10
Utah	Paper Mfg	Pumps	Facility Energy Management			Per Industry	Existing	30,591	2	$13,198	75%	100%	$0.00	486	486
Utah	Paper Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	8,244	15	$21,269	62%	100%	$0.03	323	323
Utah	Paper Mfg	Pumps	Motor rewinds			Per Industry	Existing	3,720	9	$48,706	4.4%	100%	$0.02	9	9
Utah	Paper Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	50,301	12	$56,287	28%	100%	$0.01	1,950	1,950
Utah	Paper Mfg	Pumps	Pump System Optimization			Per Industry	Existing	43,560	12	$65,071	75%	100%	$0.02	3,195	3,195
Utah	Paper Mfg	Pumps	Synchronous Belts			Per Industry	Existing	83,376	10	$82,015	17%	100%	$0.02	68	68
Utah	Petroleum Refining	Fans	Facility Energy Management			Per Industry	Existing	83,314	2	$3,836	3.0%	100%	$0.00	5	5
Utah	Petroleum Refining	Fans	Fan System Optimization			Per Industry	Existing	65,584	10	$56,300	30%	100%	$0.02	234	234
Utah	Petroleum Refining	Fans	High Efficiency Motors			Per Industry	Existing	47,748	15	$64,323	76%	100%	$0.03	114	114
Utah	Petroleum Refining	Fans	Improved Controls - Fans			Per Industry	Existing	10,989	10	$55,217	34%	100%	$0.01	213	213
Utah	Petroleum Refining	Fans	Properly Sized Fans			Per Industry	Existing	37,629	10	$65,072	15%	100%	$0.01	161	161
Utah	Petroleum Refining	Fans	Synchronous Belts			Per Industry	Existing	11,448	10	$23,842	21%	100%	$0.02	24	24
Utah	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,569	15	$14,935	14%	100%	$0.01	14	14
Utah	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	24,175	15	$30,409	5.0%	100%	$0.01	16	16
Utah	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	27,966	20	$97,770	1.0%	100%	$0.01	7	7
Utah	Petroleum Refining	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	42,655	20	$32,590	6.5%	100%	$0.01	16	16
Utah	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	41,308	20	$72,700	2.5%	100%	$0.01	13	13
Utah	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	75,474	15	$10,913	45%	100%	$0.01	34	34
Utah	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	92,879	15	$21,955	20%	100%	$0.01	39	39
Utah	Petroleum Refining	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	97,046	15	$1,597	2.5%	100%	$0.00	41	41
Utah	Petroleum Refining	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	77,300	30	$63,535	4.0%	100%	$0.01	27	27
Utah	Petroleum Refining	Hvac	Improved Controls - HVAC			Per Industry	Existing	4,311	10	$30,417	33%	100%	$0.00	204	204
Utah	Petroleum Refining	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	44,659	10	$3,967	73%	100%	$0.00	109	109
Utah	Petroleum Refining	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	69,773	15	$37,731	0.0%	100%	$0.16	0.00	0.00

Table C-2.3. Industrial Measure Details

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Utah	Petroleum Refining	Lighting	Facility Energy Management			Per Industry	Existing	40,873	2	$855	75%	100%	$0.00	31	31
Utah	Petroleum Refining	Lighting	Induction (High Bay)			Per Industry	Existing	24,581	20	$13,176	0.0%	100%	$2.82	0.00	0.00
Utah	Petroleum Refining	Lighting	LED (High Bay)			Per Industry	Existing	10,424	20	$54,264	2.1%	100%	$1.29	8	8
Utah	Petroleum Refining	Lighting	Lighting Controls			Per Industry	Existing	8,948	10	$52,401	28%	100%	$0.01	118	118
Utah	Petroleum Refining	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	61,375	15	$78,582	40%	100%	$0.24	190	190
Utah	Petroleum Refining	Lighting	Metal Halide (High Bay)			Per Industry	Existing	58,381	15	$38,782	0.0%	100%	$0.17	0.00	0.00
Utah	Petroleum Refining	Lighting	Screw Base CFL			Per Industry	Existing	80,191	4	$36,814	10%	100%	$0.00	191	191
Utah	Petroleum Refining	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	57,852	1	$28,989	0.0%	100%	$0.00	0.00	0.00
Utah	Petroleum Refining	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	29,535	1	$25,452	0.0%	100%	$0.00	0.00	0.00
Utah	Petroleum Refining	Lighting	Screw Base LED			Per Industry	Existing	94,852	12	$1,452	1.8%	100%	$0.01	34	34
Utah	Petroleum Refining	Lighting	T5 Linear Florescent			Per Industry	Existing	68,484	13	$99,033	11%	100%	$0.30	77	77
Utah	Petroleum Refining	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	40,437	13	$25,417	34%	100%	$0.06	188	188
Utah	Petroleum Refining	Lighting	T8 Linear Florescent			Per Industry	Existing	17,048	13	$93,020	0.0%	100%	$0.08	0.00	0.00
Utah	Petroleum Refining	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	59,087	13	$61,537	0.0%	100%	$0.08	0.00	0.00
Utah	Petroleum Refining	Motors Other	Facility Energy Management			Per Industry	Existing	21,845	2	$10,922	75%	100%	$0.00	402	402
Utah	Petroleum Refining	Motors Other	High Efficiency Motors			Per Industry	Existing	20,596	15	$83,111	76%	100%	$0.03	329	329
Utah	Petroleum Refining	Motors Other	Improved Controls - Motors			Per Industry	Existing	84,317	10	$1,958	34%	100%	$0.01	346	346
Utah	Petroleum Refining	Motors Other	Motors Other			Per Industry	Existing	24,894	15	$4,101	91%	100%	$0.00	211	211
Utah	Petroleum Refining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	56,887	10	$35,802	6.8%	100%	$0.02	11	11
Utah	Petroleum Refining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	91,841	11.2	$5,219	4.8%	100%	$0.03	14	14
Utah	Petroleum Refining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	55,136	8	$22,505	4.1%	100%	$0.01	6	6
Utah	Petroleum Refining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	57,990	8	$16,069	4.1%	100%	$0.01	6	6
Utah	Petroleum Refining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	70,291	9	$51,937	7.2%	100%	$0.02	12	12
Utah	Petroleum Refining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	25,857	12	$54,785	11%	100%	$0.02	232	232
Utah	Petroleum Refining	Motors Other	Synchronous Belts			Per Industry	Existing	17,262	10	$67,872	21%	100%	$0.02	69	69
Utah	Petroleum Refining	Other	Bldg Improvements			Per Industry	Existing	8,492	15	$27,263	35%	100%	$0.01	75	75
Utah	Petroleum Refining	Other	Facility Energy Management			Per Industry	Existing	18,815	2	$393	75%	100%	$0.00	14	14
Utah	Petroleum Refining	Other	Transformers			Per Industry	Existing	16,352	30	$3,265	20%	100%	$0.02	3	3
Utah	Petroleum Refining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	30,309	10	$94,391	27%	100%	$0.00	503	503
Utah	Petroleum Refining	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	26,763	10	$91,383	18%	100%	$0.00	419	419

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Utah	Petroleum Refining	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	55,381	10	$73,222	31%	100%	$0.01	1,085	1,085
Utah	Petroleum Refining	Process Aircomp	Facility Energy Management			Per Industry	Existing	11,414	2	$4,424	41%	100%	$0.00	89	89
Utah	Petroleum Refining	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	26,016	15	$43,280	77%	100%	$0.03	100	100
Utah	Petroleum Refining	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	37,208	10	$68,766	3.3%	100%	$0.00	72	72
Utah	Petroleum Refining	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	11,292	10	$30,323	35%	100%	$0.05	75	75
Utah	Petroleum Refining	Process Aircomp	Outside Air Intake			Per Industry	Existing	64,210	10	$75,505	35%	100%	$0.04	58	58
Utah	Petroleum Refining	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	82,105	10	$13,584	18%	100%	$0.02	123	123
Utah	Petroleum Refining	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	91,168	10	$26,390	18%	100%	$0.01	34	34
Utah	Petroleum Refining	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	21,533	10	$30,385	18%	100%	$0.03	491	491
Utah	Petroleum Refining	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	11,292	10	$65,755	18%	100%	$0.02	38	38
Utah	Petroleum Refining	Process Cool	Equipment: Chillers			Per Industry	Existing	99,024	20	$35,962	8.0%	100%	$0.02	73	73
Utah	Petroleum Refining	Process Cool	Facility Energy Management			Per Industry	Existing	92,563	2	$1,937	75%	100%	$0.00	71	71
Utah	Petroleum Refining	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	1,662	10	$65,463	34%	100%	$0.07	104	104
Utah	Petroleum Refining	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	26,342	10	$76,919	33%	100%	$0.00	516	516
Utah	Petroleum Refining	Process Heat	Process Heat O&M			Per Industry	Existing	71,148	2	$36,088	63%	100%	$0.00	763	763
Utah	Petroleum Refining	Process Other	Facility Energy Management			Per Industry	Existing	1,878	2	$39	75%	100%	$0.00	1	1
Utah	Petroleum Refining	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	68,115	10	$90,067	34%	100%	$0.01	198	198
Utah	Petroleum Refining	Process Refrig	Optimization of operating parameters			Per Industry	Existing	36,050	3	$39,315	85%	100%	$0.00	555	555
Utah	Petroleum Refining	Process Refrig	Synchronous Belts			Per Industry	Existing	54,504	10	$11,660	21%	100%	$0.02	11	11
Utah	Petroleum Refining	Pumps	Facility Energy Management			Per Industry	Existing	31,839	2	$6,945	75%	100%	$0.00	255	255
Utah	Petroleum Refining	Pumps	High Efficiency Motors			Per Industry	Existing	67,456	15	$16,440	79%	100%	$0.03	216	216
Utah	Petroleum Refining	Pumps	Motor rewinds			Per Industry	Existing	7,204	9	$25,631	5.5%	100%	$0.02	6	6
Utah	Petroleum Refining	Pumps	Pump Equipment Upgrade			Per Industry	Existing	4,873	12	$50,609	35%	100%	$0.01	1,302	1,302
Utah	Petroleum Refining	Pumps	Pump System Optimization			Per Industry	Existing	80,489	12	$60,478	75%	100%	$0.02	1,681	1,681
Utah	Petroleum Refining	Pumps	Synchronous Belts			Per Industry	Existing	1,746	10	$43,159	22%	100%	$0.02	45	45
Utah	Stone Clay Glass Products	Fans	Facility Energy Management			Per Industry	Existing	61,957	2	$13,854	25%	100%	$0.00	172	172
Utah	Stone Clay Glass Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	84,308	10	$78,655	23%	100%	$0.01	2,976	2,976
Utah	Stone Clay Glass Products	Fans	High Efficiency Motors			Per Industry	Existing	33,524	15	$32,275	76%	100%	$0.03	418	418

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Stone Clay Glass Products	Fans	Improved Controls - Fans			Per Industry	Existing	6,310	10	$99,393	34%	100%	$0.01	779	779
Utah	Stone Clay Glass Products	Fans	Properly Sized Fans			Per Industry	Existing	46,923	10	$96,084	15%	100%	$0.01	588	588
Utah	Stone Clay Glass Products	Fans	Synchronous Belts			Per Industry	Existing	2,445	10	$86,095	21%	100%	$0.02	88	88
Utah	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	62,812	15	$41,576	14%	100%	$0.01	133	133
Utah	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	72,966	15	$88,264	5.0%	100%	$0.01	157	157
Utah	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	628	20	$26,793	1.0%	100%	$0.01	70	70
Utah	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	209	20	$8,931	6.5%	100%	$0.01	153	153
Utah	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	31,236	20	$89,154	2.5%	100%	$0.01	131	131
Utah	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	15,449	15	$3,455	45%	100%	$0.01	331	331
Utah	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	28,371	15	$8,127	20%	100%	$0.01	376	376
Utah	Stone Clay Glass Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	38,916	15	$15,138	2.5%	100%	$0.00	389	389
Utah	Stone Clay Glass Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	20,348	30	$2,270	4.0%	100%	$0.01	264	264
Utah	Stone Clay Glass Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	28,465	10	$88,339	33%	100%	$0.00	1,968	1,968
Utah	Stone Clay Glass Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	71,278	10	$37,606	74%	100%	$0.00	1,047	1,047
Utah	Stone Clay Glass Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	47,796	15	$78,162	0.0%	100%	$0.16	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	Facility Energy Management			Per Industry	Existing	92,159	2	$8,207	75%	100%	$0.00	302	302
Utah	Stone Clay Glass Products	Lighting	Induction (High Bay)			Per Industry	Existing	95,292	20	$42,232	0.0%	100%	$2.82	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	LED (High Bay)			Per Industry	Existing	37,823	20	$44,349	2.1%	100%	$1.29	85	85
Utah	Stone Clay Glass Products	Lighting	Lighting Controls			Per Industry	Existing	23,656	10	$2,768	28%	100%	$0.01	1,137	1,137

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Stone Clay Glass Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	26,668	15	$26,816	40%	100%	$0.24	1,826	1,826
Utah	Stone Clay Glass Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	79,040	15	$69,345	0.0%	100%	$0.17	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	Screw Base CFL			Per Industry	Existing	80,046	4	$53,215	10%	100%	$0.00	1,838	1,838
Utah	Stone Clay Glass Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	46,820	1	$78,138	0.0%	100%	$0.00	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	21,180	1	$44,203	0.0%	100%	$0.00	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	Screw Base LED			Per Industry	Existing	20,719	12	$92,288	1.8%	100%	$0.01	327	327
Utah	Stone Clay Glass Products	Lighting	T5 Linear Florescent			Per Industry	Existing	13,774	13	$76,980	11%	100%	$0.30	745	745
Utah	Stone Clay Glass Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	85,231	13	$81,672	34%	100%	$0.06	1,809	1,809
Utah	Stone Clay Glass Products	Lighting	T8 Linear Florescent			Per Industry	Existing	1,370	13	$70,833	0.0%	100%	$0.08	0.00	0.00
Utah	Stone Clay Glass Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	64,169	13	$87,676	0.0%	100%	$0.08	0.00	0.00
Utah	Stone Clay Glass Products	Motors Other	Facility Energy Management			Per Industry	Existing	84,404	2	$39,440	75%	100%	$0.00	1,453	1,453
Utah	Stone Clay Glass Products	Motors Other	High Efficiency Motors			Per Industry	Existing	18,791	15	$61,222	75%	100%	$0.03	1,169	1,169
Utah	Stone Clay Glass Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	54,410	10	$68,174	34%	100%	$0.01	1,232	1,232
Utah	Stone Clay Glass Products	Motors Other	Motors Other			Per Industry	Existing	12,101	15	$14,809	90%	100%	$0.00	750	750
Utah	Stone Clay Glass Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	66,527	10	$29,285	6.7%	100%	$0.02	39	39
Utah	Stone Clay Glass Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	53,852	11.2	$79,951	4.7%	100%	$0.03	51	51
Utah	Stone Clay Glass Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	60,203	8	$81,266	4.0%	100%	$0.01	22	22
Utah	Stone Clay Glass Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	70,509	8	$58,025	4.0%	100%	$0.01	23	23
Utah	Stone Clay Glass Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	14,929	9	$87,548	7.1%	100%	$0.02	44	44
Utah	Stone Clay Glass Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	76,559	12	$42,249	10%	100%	$0.02	827	827
Utah	Stone Clay Glass Products	Motors Other	Synchronous Belts			Per Industry	Existing	45,647	10	$45,088	21%	100%	$0.02	247	247

Table C-2.3. Industrial Measure Details

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Utah	Stone Clay Glass Products	Other	Bldg Improvements			Per Industry	Existing	92,410	15	$22,062	35%	100%	$0.01	1,436	1,436
Utah	Stone Clay Glass Products	Other	Facility Energy Management			Per Industry	Existing	60,300	2	$7,541	75%	100%	$0.00	277	277
Utah	Stone Clay Glass Products	Other	Transformers			Per Industry	Existing	13,123	30	$62,521	20%	100%	$0.02	64	64
Utah	Stone Clay Glass Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	9,322	10	$40,851	26%	100%	$0.00	1,765	1,765
Utah	Stone Clay Glass Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	2,037	10	$29,991	17%	100%	$0.00	1,470	1,470
Utah	Stone Clay Glass Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	77,523	10	$47,722	30%	100%	$0.01	3,803	3,803
Utah	Stone Clay Glass Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	63,425	2	$15,978	42%	100%	$0.00	330	330
Utah	Stone Clay Glass Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	55,049	15	$56,285	75%	100%	$0.03	351	351
Utah	Stone Clay Glass Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	17,547	10	$48,319	3.2%	100%	$0.00	255	255
Utah	Stone Clay Glass Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	62,984	10	$70,602	36%	100%	$0.05	279	279
Utah	Stone Clay Glass Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	92,971	10	$72,653	36%	100%	$0.04	217	217
Utah	Stone Clay Glass Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	63,112	10	$71,261	17%	100%	$0.02	431	431
Utah	Stone Clay Glass Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	90,318	10	$95,297	17%	100%	$0.01	120	120
Utah	Stone Clay Glass Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	27,571	10	$81,869	17%	100%	$0.03	1,720	1,720
Utah	Stone Clay Glass Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	62,984	10	$37,444	17%	100%	$0.02	133	133
Utah	Stone Clay Glass Products	Process Cool	Equipment: Chillers			Per Industry	Existing	32,398	20	$17,158	8.0%	100%	$0.02	224	224
Utah	Stone Clay Glass Products	Process Cool	Facility Energy Management			Per Industry	Existing	81,327	2	$5,888	75%	100%	$0.00	216	216
Utah	Stone Clay Glass Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	16,842	10	$6,821	34%	100%	$0.07	318	318
Utah	Stone Clay Glass Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	84,322	10	$94,357	36%	100%	$0.00	9,568	9,568
Utah	Stone Clay Glass Products	Process Heat	Process Heat O&M			Per Industry	Existing	7,335	2	$7,268	70%	100%	$0.00	14,140	14,140
Utah	Stone Clay Glass Products	Process Other	Facility Energy Management			Per Industry	Existing	49,237	2	$1,030	75%	100%	$0.00	37	37

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Utah	Stone Clay Glass Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	51,488	10	$25,236	34%	100%	$0.01	717	717
Utah	Stone Clay Glass Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	96,806	3	$41,970	85%	100%	$0.00	2,007	2,007
Utah	Stone Clay Glass Products	Process Refrig	Synchronous Belts			Per Industry	Existing	96,816	10	$42,104	21%	100%	$0.02	42	42
Utah	Stone Clay Glass Products	Pumps	Facility Energy Management			Per Industry	Existing	98,287	2	$25,080	75%	100%	$0.00	924	924
Utah	Stone Clay Glass Products	Pumps	High Efficiency Motors			Per Industry	Existing	65,795	15	$20,469	76%	100%	$0.03	750	750
Utah	Stone Clay Glass Products	Pumps	Motor rewinds			Per Industry	Existing	87,120	9	$92,555	5.3%	100%	$0.02	21	21
Utah	Stone Clay Glass Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	17,345	12	$27,168	34%	100%	$0.01	4,523	4,523
Utah	Stone Clay Glass Products	Pumps	Synchronous Belts			Per Industry	Existing	28,514	10	$55,851	21%	100%	$0.02	158	158
Utah	Transportation Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	37,923	2	$7,072	5.3%	100%	$0.00	18	18
Utah	Transportation Equipment Mfg	Fans	Fan System Optimization			Per Industry	Existing	11,283	10	$88,124	30%	100%	$0.02	437	437
Utah	Transportation Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	72,359	15	$18,574	76%	100%	$0.03	213	213
Utah	Transportation Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	26,303	10	$1,788	34%	100%	$0.01	398	398
Utah	Transportation Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	12,774	10	$4,296	15%	100%	$0.01	300	300
Utah	Transportation Equipment Mfg	Fans	Synchronous Belts			Per Industry	Existing	5,445	10	$43,950	21%	100%	$0.02	45	45
Utah	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	79,222	15	$49,851	14%	100%	$0.01	330	330
Utah	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	93,660	15	$12,334	5.0%	100%	$0.01	390	390
Utah	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	52,262	20	$90,216	1.0%	100%	$0.01	175	175
Utah	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	84,087	20	$63,405	6.5%	100%	$0.01	379	379
Utah	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	79,887	20	$2,981	2.5%	100%	$0.01	325	325
Utah	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	67,960	15	$55,651	45%	100%	$0.01	818	818
Utah	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	18,120	15	$14,307	20%	100%	$0.01	929	929

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Utah	Transportation Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	10,041	15	$37,410	2.5%	100%	$0.00	961	961
Utah	Transportation Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	65,436	30	$88,281	4.0%	100%	$0.01	652	652
Utah	Transportation Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	55,712	10	$12,520	33%	100%	$0.00	4,864	4,864
Utah	Transportation Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	88,590	10	$92,929	74%	100%	$0.00	2,587	2,587
Utah	Transportation Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	37,382	15	$31,346	0.0%	100%	$0.16	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	76,849	2	$20,445	75%	100%	$0.00	753	753
Utah	Transportation Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	77,414	20	$72,372	0.0%	100%	$2.82	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	8,919	20	$33,066	2.1%	100%	$1.29	213	213
Utah	Transportation Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	73,631	10	$52,372	28%	100%	$0.01	2,834	2,834
Utah	Transportation Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	26,609	15	$47,336	40%	100%	$0.24	4,550	4,550
Utah	Transportation Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	75,165	15	$76,579	0.0%	100%	$0.17	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	45,537	4	$79,841	10%	100%	$0.00	4,578	4,578
Utah	Transportation Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	31,778	1	$92,828	0.0%	100%	$0.00	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	65,654	1	$8,298	0.0%	100%	$0.00	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	95,946	12	$4,544	1.8%	100%	$0.01	814	814
Utah	Transportation Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	76,389	13	$25,453	11%	100%	$0.30	1,858	1,858
Utah	Transportation Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	16,150	13	$67,241	34%	100%	$0.06	4,506	4,506
Utah	Transportation Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	67,212	13	$92,957	0.0%	100%	$0.08	0.00	0.00
Utah	Transportation Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	61,876	13	$20,432	0.0%	100%	$0.08	0.00	0.00
Utah	Transportation Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	58,198	2	$15,869	75%	100%	$0.00	584	584

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Utah	Transportation Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	11,092	15	$66,046	75%	100%	$0.03	470	470
Utah	Transportation Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	30,133	10	$48,136	34%	100%	$0.01	495	495
Utah	Transportation Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	26,752	15	$5,958	90%	100%	$0.00	302	302
Utah	Transportation Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	27,944	10	$52,018	6.7%	100%	$0.02	15	15
Utah	Transportation Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	24,022	11.2	$52,875	4.7%	100%	$0.03	20	20
Utah	Transportation Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	25,400	8	$32,698	4.0%	100%	$0.01	9	9
Utah	Transportation Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	29,547	8	$23,346	4.0%	100%	$0.01	9	9
Utah	Transportation Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	47,419	9	$75,460	7.1%	100%	$0.02	17	17
Utah	Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	88,700	12	$60,766	10%	100%	$0.02	333	333
Utah	Transportation Equipment Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	60,956	10	$98,612	21%	100%	$0.02	99	99
Utah	Transportation Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	2,915	15	$92,672	35%	100%	$0.01	1,080	1,080
Utah	Transportation Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	71,001	2	$5,672	75%	100%	$0.00	208	208
Utah	Transportation Equipment Mfg	Other	Transformers			Per Industry	Existing	35,517	30	$47,025	20%	100%	$0.02	48	48
Utah	Transportation Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	9,921	10	$51,196	26%	100%	$0.00	1,819	1,819
Utah	Transportation Equipment Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	57,047	10	$40,006	17%	100%	$0.00	1,515	1,515
Utah	Transportation Equipment Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	56,227	10	$88,626	30%	100%	$0.01	3,918	3,918
Utah	Transportation Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	86,595	2	$16,463	42%	100%	$0.00	340	340
Utah	Transportation Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	68,860	15	$61,029	75%	100%	$0.03	362	362
Utah	Transportation Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	51,781	10	$55,855	3.2%	100%	$0.00	262	262
Utah	Transportation Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	86,141	10	$84,886	36%	100%	$0.05	288	288
Utah	Transportation Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	10,968	10	$80,928	36%	100%	$0.04	223	223

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Utah	Transportation Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	37,870	10	$94,669	17%	100%	$0.02	444	444
Utah	Transportation Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	11,270	10	$98,189	17%	100%	$0.01	124	124
Utah	Transportation Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	25,846	10	$5,758	17%	100%	$0.03	1,772	1,772
Utah	Transportation Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	86,141	10	$44,651	17%	100%	$0.02	137	137
Utah	Transportation Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	64,652	20	$51,870	8.0%	100%	$0.02	235	235
Utah	Transportation Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	94,944	2	$6,173	75%	100%	$0.00	227	227
Utah	Transportation Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	61,219	10	$45,873	34%	100%	$0.07	333	333
Utah	Transportation Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	86,438	10	$93,185	36%	100%	$0.00	3,646	3,646
Utah	Transportation Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	9,040	2	$31,386	70%	100%	$0.00	5,387	5,387
Utah	Transportation Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	85,286	2	$1,785	75%	100%	$0.00	65	65
Utah	Transportation Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	85,630	10	$19,673	34%	100%	$0.01	484	484
Utah	Transportation Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	51,324	3	$95,890	85%	100%	$0.00	1,355	1,355
Utah	Transportation Equipment Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	32,935	10	$28,438	21%	100%	$0.02	28	28
Utah	Transportation Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	38,321	2	$15,453	75%	100%	$0.00	569	569
Utah	Transportation Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	95,071	15	$59,071	76%	100%	$0.03	462	462
Utah	Transportation Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	38,523	9	$57,027	5.3%	100%	$0.02	13	13
Utah	Transportation Equipment Mfg	Pumps	Synchronous Belts			Per Industry	Existing	48,871	10	$96,027	21%	100%	$0.02	97	97
Utah	Wastewater	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	3.0%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00
Utah	Wastewater	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
Utah	Wastewater	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Utah	Wastewater	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	42,412	15	$84,125	0.0%	100%	$0.16	0.00	0.00
Utah	Wastewater	Lighting	Facility Energy Management			Per Industry	Existing	15,741	2	$329	75%	100%	$0.00	12	12
Utah	Wastewater	Lighting	Induction (High Bay)			Per Industry	Existing	47,980	20	$99,663	0.0%	100%	$2.82	0.00	0.00
Utah	Wastewater	Lighting	LED (High Bay)			Per Industry	Existing	58,068	20	$62,782	2.1%	100%	$1.29	3	3
Utah	Wastewater	Lighting	Lighting Controls			Per Industry	Existing	57,499	10	$20,181	28%	100%	$0.01	45	45
Utah	Wastewater	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	77,691	15	$30,938	40%	100%	$0.24	73	73
Utah	Wastewater	Lighting	Metal Halide (High Bay)			Per Industry	Existing	99,511	15	$7,503	0.0%	100%	$0.17	0.00	0.00
Utah	Wastewater	Lighting	Screw Base CFL			Per Industry	Existing	85,611	4	$14,178	10%	100%	$0.00	73	73
Utah	Wastewater	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	99,981	1	$11,164	0.0%	100%	$0.00	0.00	0.00
Utah	Wastewater	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	65,428	1	$9,802	0.0%	100%	$0.00	0.00	0.00
Utah	Wastewater	Lighting	Screw Base LED			Per Industry	Existing	91,258	12	$16,099	1.8%	100%	$0.01	13	13
Utah	Wastewater	Lighting	T5 Linear Florescent			Per Industry	Existing	57,455	13	$62,462	11%	100%	$0.30	29	29
Utah	Wastewater	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	8,140	13	$63,842	34%	100%	$0.06	72	72
Utah	Wastewater	Lighting	T8 Linear Florescent			Per Industry	Existing	60,619	13	$51,365	0.0%	100%	$0.08	0.00	0.00
Utah	Wastewater	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	15,323	13	$16,267	0.0%	100%	$0.08	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Wastewater	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	11%	100%	.	0.00	0.00
Utah	Wastewater	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Utah	Wastewater	Other	Bldg Improvements			Per Industry	Existing	12,819	15	$71,669	35%	100%	$0.01	472	472
Utah	Wastewater	Other	Facility Energy Management			Per Industry	Existing	18,477	2	$2,479	75%	100%	$0.00	91	91
Utah	Wastewater	Other	Transformers			Per Industry	Existing	2,964	30	$20,558	20%	100%	$0.02	21	21
Utah	Wastewater	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	48,393	10	$44,880	26%	100%	$0.00	1,266	1,266
Utah	Wastewater	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	36,349	10	$37,078	17%	100%	$0.00	1,055	1,055
Utah	Wastewater	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	64,335	10	$68,255	30%	100%	$0.01	2,728	2,728
Utah	Wastewater	Process Aircomp	Facility Energy Management			Per Industry	Existing	48,474	2	$11,479	66%	100%	$0.00	373	373
Utah	Wastewater	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	26,925	15	$12,281	75%	100%	$0.03	252	252
Utah	Wastewater	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	44,584	10	$78,402	8.8%	100%	$0.00	501	501
Utah	Wastewater	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Wastewater	Pumps	Facility Energy Management			Per Industry	Existing	45,817	2	$3,051	75%	100%	$0.00	112	112
Utah	Wastewater	Pumps	High Efficiency Motors			Per Industry	Existing	17,526	15	$51,166	75%	100%	$0.03	90	90
Utah	Wastewater	Pumps	Motor rewinds			Per Industry	Existing	47,108	9	$11,262	5.3%	100%	$0.02	2	2
Utah	Wastewater	Pumps	Pump Equipment Upgrade			Per Industry	Existing	84,062	12	$98,007	34%	100%	$0.01	546	546
Utah	Wastewater	Pumps	Pump System Optimization			Per Industry	Existing	58,155	12	$46,286	75%	100%	$0.02	738	738
Utah	Wastewater	Pumps	Synchronous Belts			Per Industry	Existing	88,651	10	$18,965	21%	100%	$0.02	19	19
Utah	Water	Fans	Efficient Centrifugal Fan			Per Industry	Existing	86,898	10	$88,527	11%	100%	$0.01	408	408
Utah	Water	Fans	Facility Energy Management			Per Industry	Existing	48,595	2	$7,296	3.0%	100%	$0.00	10	10
Utah	Water	Fans	Fan Equipment Upgrade			Per Industry	Existing	27,072	10	$68,034	23%	100%	$0.01	1,567	1,567
Utah	Water	Fans	Fan System Optimization			Per Industry	Existing	55,854	10	$97,224	30%	100%	$0.02	443	443

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Water	Fans	High Efficiency Motors			Per Industry	Existing	80,961	15	$22,319	75%	100%	$0.03	216	216
Utah	Water	Fans	Improved Controls - Fans			Per Industry	Existing	61,873	10	$5,003	34%	100%	$0.01	403	403
Utah	Water	Fans	Properly Sized Fans			Per Industry	Existing	73,182	10	$13,906	15%	100%	$0.01	304	304
Utah	Water	Fans	Synchronous Belts			Per Industry	Existing	11,933	10	$45,338	21%	100%	$0.02	45	45
Utah	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Utah	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Utah	Water	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Utah	Water	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Utah	Water	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Utah	Water	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Utah	Water	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Utah	Water	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Utah	Water	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Utah	Water	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Utah	Water	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Utah	Water	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	5,252	15	$7,532	0.0%	100%	$0.16	0.00	0.00
Utah	Water	Lighting	Facility Energy Management			Per Industry	Existing	66,902	2	$1,400	75%	100%	$0.00	51	51
Utah	Water	Lighting	Induction (High Bay)			Per Industry	Existing	3,916	20	$23,570	0.0%	100%	$2.82	0.00	0.00
Utah	Water	Lighting	LED (High Bay)			Per Industry	Existing	71,791	20	$91,823	2.1%	100%	$1.29	14	14
Utah	Water	Lighting	Lighting Controls			Per Industry	Existing	69,374	10	$85,772	28%	100%	$0.01	194	194
Utah	Water	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	55,188	15	$56,490	40%	100%	$0.24	311	311
Utah	Water	Lighting	Metal Halide (High Bay)			Per Industry	Existing	22,923	15	$81,888	0.0%	100%	$0.17	0.00	0.00
Utah	Water	Lighting	Screw Base CFL			Per Industry	Existing	13,850	4	$60,258	10%	100%	$0.00	313	313
Utah	Water	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	49,922	1	$47,450	0.0%	100%	$0.00	0.00	0.00
Utah	Water	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	3,072	1	$41,661	0.0%	100%	$0.00	0.00	0.00
Utah	Water	Lighting	Screw Base LED			Per Industry	Existing	37,848	12	$93,423	1.8%	100%	$0.01	55	55
Utah	Water	Lighting	T5 Linear Florescent			Per Industry	Existing	94,187	13	$90,464	11%	100%	$0.30	127	127

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Utah	Water	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	84,598	13	$96,331	34%	100%	$0.06	308	308
Utah	Water	Lighting	T8 Linear Florescent			Per Industry	Existing	82,632	13	$43,302	0.0%	100%	$0.08	0.00	0.00
Utah	Water	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	15,125	13	$19,135	0.0%	100%	$0.08	0.00	0.00
Utah	Water	Motors Other	Facility Energy Management			Per Industry	Existing	48,595	2	$7,296	75%	100%	$0.00	268	268
Utah	Water	Motors Other	High Efficiency Motors			Per Industry	Existing	80,961	15	$22,319	75%	100%	$0.03	216	216
Utah	Water	Motors Other	Improved Controls - Motors			Per Industry	Existing	57,530	10	$68,108	34%	100%	$0.01	228	228
Utah	Water	Motors Other	Motors Other			Per Industry	Existing	50,230	15	$2,739	90%	100%	$0.00	139	139
Utah	Water	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	4,801	10	$23,916	6.7%	100%	$0.02	7	7
Utah	Water	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	94,952	11.2	$70,287	4.7%	100%	$0.03	9	9
Utah	Water	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	3,632	8	$15,033	4.0%	100%	$0.01	4	4
Utah	Water	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	5,538	8	$10,734	4.0%	100%	$0.01	4	4
Utah	Water	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	13,755	9	$34,694	7.1%	100%	$0.02	8	8
Utah	Water	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	20,087	12	$3,799	11%	100%	$0.02	153	153
Utah	Water	Motors Other	Synchronous Belts			Per Industry	Existing	11,933	10	$45,338	21%	100%	$0.02	45	45
Utah	Water	Other	Bldg Improvements			Per Industry	Existing	79,483	15	$29,594	35%	100%	$0.01	2,008	2,008
Utah	Water	Other	Facility Energy Management			Per Industry	Existing	3,527	2	$10,538	75%	100%	$0.00	388	388
Utah	Water	Other	Transformers			Per Industry	Existing	37,597	30	$87,375	20%	100%	$0.02	89	89
Utah	Water	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Water	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Water	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Water	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Utah	Water	Pumps	Facility Energy Management			Per Industry	Existing	53,549	2	$47,166	60%	100%	$0.00	1,380	1,380
Utah	Water	Pumps	High Efficiency Motors			Per Industry	Existing	16,315	15	$90,752	75%	100%	$0.03	1,400	1,400
Utah	Water	Pumps	Motor rewinds			Per Industry	Existing	28,035	9	$74,064	5.3%	100%	$0.02	39	39
Utah	Water	Pumps	Pump Equipment Upgrade			Per Industry	Existing	80,961	12	$60,120	34%	100%	$0.01	8,447	8,447
Utah	Water	Pumps	Pump System Optimization			Per Industry	Existing	7,863	12	$6,252	15%	100%	$0.02	2,349	2,349
Utah	Water	Pumps	Synchronous Belts			Per Industry	Existing	70,074	10	$93,100	21%	100%	$0.02	295	295
Washington	Agriculture	Fans	Circulating Fans			Per Industry	Existing	67,925	10	$9,415	32%	100%	$0.21	460	460
Washington	Agriculture	Fans	High-efficiency Ventilation Systems			Per Industry	Existing	75,371	10	$7,460	32%	100%	$0.28	521	521
Washington	Agriculture	Fans	Programmable Ventilation Controllers			Per Industry	Existing	31,358	10	$3,535	32%	100%	$0.02	9	9
Washington	Agriculture	Motors Other	VFDs - Potato / Onion Shed			Per Industry	Existing	59,238	10	$60,170	0.1%	100%	$0.05	10	10
Washington	Agriculture	Other	Agricultural Engine Block Heater Timers			Per Industry	Existing	74,906	10	$35,310	18%	100%	$0.01	95	95
Washington	Agriculture	Process Cool	Milk Precoolers			Per Industry	Existing	38,773	15	$77,660	0.4%	100%	$0.06	1	1
Washington	Agriculture	Process Heat	Heat Lamp Setback (Microzone)			Per Industry	Existing	41,113	15	$23,989	1.4%	100%	$0.02	1	1

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Agriculture	Process Heat	Heat Lamp/Heating Pad Controller			Per Industry	Existing	48,773	15	$57,371	1.4%	100%	$0.01	7	7
Washington	Agriculture	Process Heat	Heat Lamps			Per Industry	Existing	58,349	10	$19,991	1.4%	100%	$0.00	13	13
Washington	Agriculture	Process Heat	Heat Reclaimers			Per Industry	Existing	92,625	15	$71,859	0.4%	100%	$0.08	12	12
Washington	Agriculture	Process Heat	High-efficiency Livestock Waterers			Per Industry	Existing	27,832	10	$13,089	32%	100%	$0.05	1,037	1,037
Washington	Agriculture	Pumps	Automatic Milker Takeoffs			Per Industry	Existing	27,170	15	$85,659	0.4%	100%	$0.07	2	2
Washington	Agriculture	Pumps	VFDs for Dairy Vacuum Pumps			Per Industry	Existing	29,621	15	$59,908	0.4%	100%	$0.02	47	47
Washington	Chemical Mfg	Fans	Facility Energy Management			Per Industry	Existing	12,286	2	$257	27%	100%	$0.01	3	3
Washington	Chemical Mfg	Fans	High Efficiency Motors			Per Industry	Existing	9,902	15	$4,311	73%	100%	$0.05	6	6
Washington	Chemical Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	40,950	10	$3,700	33%	100%	$0.04	12	12
Washington	Chemical Mfg	Fans	Properly Sized Fans			Per Industry	Existing	69,545	10	$11,063	15%	100%	$0.02	9	9
Washington	Chemical Mfg	Fans	Synchronous Belts			Per Industry	Existing	7,469	10	$1,597	21%	100%	$0.03	1	1
Washington	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	19,889	15	$2,924	14%	100%	$0.02	2	2
Washington	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	63,481	15	$5,954	5.0%	100%	$0.01	2	2
Washington	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	42,553	20	$19,145	1.0%	100%	$0.01	1	1
Washington	Chemical Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	47,517	20	$6,381	6.5%	100%	$0.01	2	2
Washington	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	6,001	20	$14,236	2.5%	100%	$0.01	2	2
Washington	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	14,779	15	$2,137	45%	100%	$0.02	6	6
Washington	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	37,770	15	$4,299	20%	100%	$0.01	6	6
Washington	Chemical Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	12,741	15	$312	2.5%	100%	$0.00	7	7
Washington	Chemical Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	32,632	30	$12,441	4.0%	100%	$0.01	4	4
Washington	Chemical Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	18,339	10	$5,956	33%	100%	$0.01	35	35
Washington	Chemical Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	28,328	10	$776	73%	100%	$0.00	18	18
Washington	Chemical Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	69,598	15	$38,855	0.0%	100%	$0.25	0.00	0.00
Washington	Chemical Mfg	Lighting	Facility Energy Management			Per Industry	Existing	7,693	2	$161	75%	100%	$0.01	5	5
Washington	Chemical Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	23,448	20	$30,648	0.0%	100%	$3.44	0.00	0.00
Washington	Chemical Mfg	Lighting	LED (High Bay)			Per Industry	Existing	77,250	20	$52,465	2.1%	100%	$1.61	1	1

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Chemical Mfg	Lighting	Lighting Controls			Per Industry	Existing	76,972	10	$9,863	28%	100%	$0.02	19	19
Washington	Chemical Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	86,840	15	$59,476	40%	100%	$0.33	32	32
Washington	Chemical Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	48,632	15	$1,409	0.0%	100%	$0.21	0.00	0.00
Washington	Chemical Mfg	Lighting	Screw Base CFL			Per Industry	Existing	35,067	4	$6,929	10%	100%	$-0.00	32	32
Washington	Chemical Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	93,218	1	$5,456	0.0%	100%	$0.00	0.00	0.00
Washington	Chemical Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	80,847	1	$4,790	0.0%	100%	$-0.01	0.00	0.00
Washington	Chemical Mfg	Lighting	Screw Base LED			Per Industry	Existing	37,827	12	$56,739	1.8%	100%	$0.02	5	5
Washington	Chemical Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	25,822	13	$70,368	11%	100%	$0.49	13	13
Washington	Chemical Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	1,721	13	$80,072	34%	100%	$0.10	31	31
Washington	Chemical Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	78,496	13	$73,974	0.0%	100%	$0.12	0.00	0.00
Washington	Chemical Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	5,231	13	$5,692	0.0%	100%	$0.13	0.00	0.00
Washington	Chemical Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	27,566	2	$576	75%	100%	$0.01	19	19
Washington	Chemical Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	22,218	15	$9,673	74%	100%	$0.05	15	15
Washington	Chemical Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	51,997	10	$5,386	33%	100%	$0.02	15	15
Washington	Chemical Mfg	Motors Other	Motors Other			Per Industry	Existing	11,880	15	$216	89%	100%	$0.00	9	9
Washington	Chemical Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	8,287	10	$1,891	6.7%	100%	$0.03	0.50	0.50
Washington	Chemical Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	15,416	11.2	$5,558	4.6%	100%	$0.05	0.65	0.65
Washington	Chemical Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	8,195	8	$1,188	3.9%	100%	$0.02	0.29	0.29
Washington	Chemical Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	8,345	8	$848	3.9%	100%	$0.02	0.30	0.30
Washington	Chemical Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	8,995	9	$2,743	7.0%	100%	$0.05	0.57	0.57
Washington	Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	12,300	12	$24,024	10%	100%	$0.03	10	10
Washington	Chemical Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	16,759	10	$3,585	21%	100%	$0.03	3	3
Washington	Chemical Mfg	Other	Bldg Improvements			Per Industry	Existing	34,331	15	$4,489	35%	100%	$0.02	11	11
Washington	Chemical Mfg	Other	Facility Energy Management			Per Industry	Existing	3,098	2	$64	75%	100%	$0.01	2	2
Washington	Chemical Mfg	Other	Transformers			Per Industry	Existing	2,692	30	$537	20%	100%	$0.02	0.49	0.49
Washington	Chemical Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	47,598	10	$12,768	28%	100%	$0.03	63	63
Washington	Chemical Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	28,599	2	$598	16%	100%	$0.01	4	4
Washington	Chemical Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	17,047	15	$5,854	81%	100%	$0.04	12	12
Washington	Chemical Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	89,115	10	$9,302	59%	100%	$0.00	156	156
Washington	Chemical Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	28,582	10	$17,629	38%	100%	$0.09	10	10
Washington	Chemical Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	22,213	10	$10,214	38%	100%	$0.07	7	7
Washington	Chemical Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	92,273	10	$28,893	18%	100%	$0.05	15	15
Washington	Chemical Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	25,860	10	$3,570	18%	100%	$0.02	4	4

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Chemical Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	68,160	10	$52,915	18%	100%	$0.06	62	62
Washington	Chemical Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	28,582	10	$8,895	18%	100%	$0.05	4	4
Washington	Chemical Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	29,770	1	$2,139	10%	100%	$0.00	30	30
Washington	Chemical Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	22,203	10	$9,951	28%	100%	$0.01	31	31
Washington	Chemical Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	74,198	20	$12,012	30%	100%	$0.02	20	20
Washington	Chemical Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	47,418	20	$38,692	8.0%	100%	$0.03	10	10
Washington	Chemical Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	15,178	2	$317	75%	100%	$0.01	10	10
Washington	Chemical Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	49,465	10	$43,529	34%	100%	$0.13	15	15
Washington	Chemical Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	92,946	10	$4,684	33%	100%	$0.01	28	28
Washington	Chemical Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	71,316	2	$2,197	63%	100%	$0.02	41	41
Washington	Chemical Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Chemical Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	50,379	10	$7,986	34%	100%	$0.02	15	15
Washington	Chemical Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	56,403	3	$3,486	85%	100%	$0.02	44	44
Washington	Chemical Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	4,833	10	$1,033	21%	100%	$0.03	0.93	0.93
Washington	Chemical Mfg	Pumps	Facility Energy Management			Per Industry	Existing	26,844	2	$561	59%	100%	$0.01	14	14
Washington	Chemical Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	21,635	15	$9,419	76%	100%	$0.05	15	15
Washington	Chemical Mfg	Pumps	Motor rewinds			Per Industry	Existing	8,672	9	$2,073	5.4%	100%	$0.04	0.42	0.42
Washington	Chemical Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	91,617	12	$36,452	34%	100%	$0.05	91	91
Washington	Chemical Mfg	Pumps	Pump System Optimization			Per Industry	Existing	76,391	12	$45,340	16%	100%	$-0.02	25	25
Washington	Chemical Mfg	Pumps	Synchronous Belts			Per Industry	Existing	16,320	10	$3,491	21%	100%	$0.03	3	3
Washington	Electronic Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	45,488	2	$952	27%	100%	$0.01	11	11
Washington	Electronic Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	36,662	15	$15,961	74%	100%	$0.05	24	24
Washington	Electronic Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	51,612	10	$13,701	33%	100%	$0.04	46	46
Washington	Electronic Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	57,480	10	$40,961	15%	100%	$0.02	34	34
Washington	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	47,619	15	$51,115	14%	100%	$0.02	43	43
Washington	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	9,481	15	$4,076	5.0%	100%	$0.01	51	51
Washington	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	91,441	20	$34,614	1.0%	100%	$0.01	22	22

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	30,480	20	$11,538	6.5%	100%	$0.01	49	49
Washington	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	52,610	20	$48,816	2.5%	100%	$0.01	42	42
Washington	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	58,310	15	$37,352	45%	100%	$0.02	107	107
Washington	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	60,125	15	$75,143	20%	100%	$0.01	121	121
Washington	Electronic Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	65,840	15	$5,465	2.5%	100%	$0.00	125	125
Washington	Electronic Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	18,039	30	$17,447	4.0%	100%	$0.01	85	85
Washington	Electronic Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	68,237	10	$4,103	39%	100%	$0.01	740	740
Washington	Electronic Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	95,094	10	$13,577	86%	100%	$0.00	393	393
Washington	Electronic Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	49,252	15	$92,366	0.0%	100%	$0.25	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	38,087	2	$2,890	75%	100%	$0.01	95	95
Washington	Electronic Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	20,887	20	$9,572	0.0%	100%	$3.44	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	86,588	20	$80,911	2.1%	100%	$1.61	26	26
Washington	Electronic Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	81,600	10	$77,035	28%	100%	$0.02	358	358
Washington	Electronic Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	58,721	15	$57,434	40%	100%	$0.33	575	575
Washington	Electronic Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	72,921	15	$20,233	0.0%	100%	$0.21	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	14,236	4	$24,374	10%	100%	$-0.00	579	579
Washington	Electronic Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	63,083	1	$97,938	0.0%	100%	$0.00	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	51,152	1	$85,989	0.0%	100%	$-0.01	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	63,770	12	$18,434	1.8%	100%	$0.02	103	103
Washington	Electronic Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	58,422	13	$42,789	11%	100%	$0.49	235	235

Table C-2.3. Industrial Measure Details

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Washington	Electronic Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	25,826	13	$37,241	34%	100%	$0.10	570	570
Washington	Electronic Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	8,965	13	$27,788	0.0%	100%	$0.12	0.00	0.00
Washington	Electronic Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	88,834	13	$97,112	0.0%	100%	$0.13	0.00	0.00
Washington	Electronic Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	2,061	2	$2,136	75%	100%	$0.01	70	70
Washington	Electronic Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	82,259	15	$35,812	75%	100%	$0.05	56	56
Washington	Electronic Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	92,511	10	$19,940	34%	100%	$0.02	59	59
Washington	Electronic Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	43,984	15	$802	90%	100%	$0.00	36	36
Washington	Electronic Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	30,683	10	$7,002	6.7%	100%	$0.03	1	1
Washington	Electronic Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	57,078	11.2	$20,578	4.7%	100%	$0.05	2	2
Washington	Electronic Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	30,341	8	$4,401	4.0%	100%	$0.02	1	1
Washington	Electronic Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	30,899	8	$3,142	4.0%	100%	$0.02	1	1
Washington	Electronic Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	33,305	9	$10,157	7.0%	100%	$0.05	2	2
Washington	Electronic Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	15,772	12	$88,946	10%	100%	$0.03	40	40
Washington	Electronic Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	97,317	15	$17,336	35%	100%	$0.02	289	289
Washington	Electronic Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	80,979	2	$1,694	75%	100%	$0.01	55	55
Washington	Electronic Equipment Mfg	Other	Transformers			Per Industry	Existing	70,376	30	$14,052	20%	100%	$0.02	12	12
Washington	Electronic Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	16,689	10	$47,274	26%	100%	$0.03	215	215
Washington	Electronic Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	5,884	2	$2,216	72%	100%	$0.01	70	70
Washington	Electronic Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	63,113	15	$21,676	74%	100%	$0.04	42	42
Washington	Electronic Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	70,396	10	$34,441	3.2%	100%	$0.00	31	31
Washington	Electronic Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	5,823	10	$65,270	35%	100%	$0.09	34	34

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Electronic Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	82,243	10	$37,816	35%	100%	$0.07	26	26
Washington	Electronic Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	41,625	10	$6,971	17%	100%	$0.05	52	52
Washington	Electronic Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	95,744	10	$13,217	17%	100%	$0.02	14	14
Washington	Electronic Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	63,049	10	$66,141	17%	100%	$0.06	209	209
Washington	Electronic Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	5,823	10	$32,932	17%	100%	$0.05	16	16
Washington	Electronic Equipment Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	23,959	1	$6,642	10%	100%	$0.00	94	94
Washington	Electronic Equipment Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	79,449	10	$30,900	28%	100%	$0.01	99	99
Washington	Electronic Equipment Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	30,390	20	$37,299	30%	100%	$0.02	63	63
Washington	Electronic Equipment Mfg	Process Cool	Elec Chip Fab: Solidstate Chiller			Per Industry	Existing	3,907	10	$71,592	20%	100%	$-0.05	424	424
Washington	Electronic Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	57,744	20	$20,141	8.0%	100%	$0.03	33	33
Washington	Electronic Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	47,129	2	$986	75%	100%	$0.01	32	32
Washington	Electronic Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	53,593	10	$35,162	34%	100%	$0.13	47	47
Washington	Electronic Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	11,857	10	$56,821	36%	100%	$0.01	1,033	1,033
Washington	Electronic Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	87,698	2	$73,575	69%	100%	$0.02	1,527	1,527
Washington	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust			Per Industry	Existing	17,510	10	$3,269	80%	100%	$0.03	12	12
Washington	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector			Per Industry	Existing	50,214	10	$57,707	35%	100%	$-0.07	112	112
Washington	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure			Per Industry	Existing	35,021	10	$0.00	50%	100%	$-0.01	16	16
Washington	Electronic Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	6,447	2	$134	75%	100%	$0.01	4	4
Washington	Electronic Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	86,521	10	$29,570	34%	100%	$0.02	58	58
Washington	Electronic Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	8,825	3	$12,907	85%	100%	$0.02	163	163
Washington	Electronic Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	99,386	2	$2,080	75%	100%	$0.01	68	68

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Electronic Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	80,103	15	$34,873	73%	100%	$0.05	53	53
Washington	Electronic Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	32,107	9	$7,676	5.2%	100%	$0.04	1	1
Washington	Food Mfg	Fans	Facility Energy Management			Per Industry	Existing	86,648	2	$1,813	3.7%	100%	$0.01	2	2
Washington	Food Mfg	Fans	Fan System Optimization			Per Industry	Existing	61,873	10	$73,879	30%	100%	$0.03	98	98
Washington	Food Mfg	Fans	High Efficiency Motors			Per Industry	Existing	69,837	15	$30,404	75%	100%	$0.05	48	48
Washington	Food Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	88,800	10	$26,100	34%	100%	$0.04	89	89
Washington	Food Mfg	Fans	Properly Sized Fans			Per Industry	Existing	90,463	10	$78,026	15%	100%	$0.02	67	67
Washington	Food Mfg	Fans	Synchronous Belts			Per Industry	Existing	52,679	10	$11,269	21%	100%	$0.03	10	10
Washington	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	4,191	15	$44,729	14%	100%	$0.02	37	37
Washington	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	70,874	15	$91,074	5.0%	100%	$0.01	44	44
Washington	Food Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	80,187	20	$92,811	1.0%	100%	$0.01	20	20
Washington	Food Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	26,729	20	$97,603	6.5%	100%	$0.01	43	43
Washington	Food Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	21,164	20	$17,731	2.5%	100%	$0.01	37	37
Washington	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	26,039	15	$32,685	45%	100%	$0.02	93	93
Washington	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	77,656	15	$65,755	20%	100%	$0.01	106	106
Washington	Food Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	82,995	15	$4,782	2.5%	100%	$0.00	110	110
Washington	Food Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	28,447	30	$90,281	4.0%	100%	$0.01	74	74
Washington	Food Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	9,853	10	$91,098	33%	100%	$0.01	544	544
Washington	Food Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	33,242	10	$11,881	73%	100%	$0.00	289	289
Washington	Food Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	82,741	15	$58,689	0.0%	100%	$0.25	0.00	0.00
Washington	Food Mfg	Lighting	Facility Energy Management			Per Industry	Existing	52,842	2	$3,198	75%	100%	$0.01	105	105
Washington	Food Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	65,861	20	$2,738	0.0%	100%	$3.44	0.00	0.00
Washington	Food Mfg	Lighting	LED (High Bay)			Per Industry	Existing	34,752	20	$83,115	2.1%	100%	$1.61	29	29
Washington	Food Mfg	Lighting	Lighting Controls			Per Industry	Existing	29,231	10	$95,952	28%	100%	$0.02	397	397
Washington	Food Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	25,278	15	$55,106	40%	100%	$0.33	637	637

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Food Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	66,197	15	$14,734	0.0%	100%	$0.21	0.00	0.00
Washington	Food Mfg	Lighting	Screw Base CFL			Per Industry	Existing	56,889	4	$37,664	10%	100%	$-0.00	641	641
Washington	Food Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	25,471	1	$8,403	0.0%	100%	$0.00	0.00	0.00
Washington	Food Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	6,215	1	$95,177	0.0%	100%	$-0.01	0.00	0.00
Washington	Food Mfg	Lighting	Screw Base LED			Per Industry	Existing	11,715	12	$27,259	1.8%	100%	$0.02	114	114
Washington	Food Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	99,746	13	$44,945	11%	100%	$0.49	260	260
Washington	Food Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	20,926	13	$90,817	34%	100%	$0.10	631	631
Washington	Food Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	59,520	13	$69,669	0.0%	100%	$0.12	0.00	0.00
Washington	Food Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	90,666	13	$99,828	0.0%	100%	$0.13	0.00	0.00
Washington	Food Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	50,572	2	$9,430	75%	100%	$0.01	311	311
Washington	Food Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	63,152	15	$58,102	73%	100%	$0.05	244	244
Washington	Food Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	49,882	10	$88,032	33%	100%	$0.02	257	257
Washington	Food Mfg	Motors Other	Motors Other			Per Industry	Existing	94,178	15	$3,541	88%	100%	$0.00	156	156
Washington	Food Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	35,460	10	$30,912	6.6%	100%	$0.03	8	8
Washington	Food Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	51,982	11.2	$90,848	4.6%	100%	$0.05	10	10
Washington	Food Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	33,948	8	$19,431	3.9%	100%	$0.02	4	4
Washington	Food Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	36,412	8	$13,874	3.9%	100%	$0.02	4	4
Washington	Food Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	47,033	9	$44,843	6.9%	100%	$0.05	9	9
Washington	Food Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	35,514	12	$92,672	10%	100%	$0.03	172	172
Washington	Food Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	73,931	10	$58,602	20%	100%	$0.03	51	51
Washington	Food Mfg	Other	Bldg Improvements			Per Industry	Existing	40,310	15	$40,645	35%	100%	$0.02	593	593
Washington	Food Mfg	Other	Facility Energy Management			Per Industry	Existing	66,081	2	$3,476	75%	100%	$0.01	114	114
Washington	Food Mfg	Other	Transformers			Per Industry	Existing	44,334	30	$28,819	20%	100%	$0.02	26	26
Washington	Food Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	79,060	10	$38,452	17%	100%	$0.03	150	150
Washington	Food Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	53,962	10	$57,045	29%	100%	$-0.01	389	389
Washington	Food Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	88,959	2	$1,861	43%	100%	$0.01	34	34
Washington	Food Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	53,025	15	$18,211	74%	100%	$0.04	36	36
Washington	Food Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	99,298	10	$28,935	3.2%	100%	$0.00	26	26
Washington	Food Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	88,907	10	$54,837	35%	100%	$0.09	28	28
Washington	Food Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	69,096	10	$31,771	35%	100%	$0.07	22	22
Washington	Food Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	87,017	10	$89,872	17%	100%	$0.05	44	44
Washington	Food Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	80,440	10	$11,104	17%	100%	$0.02	12	12
Washington	Food Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	45,172	10	$75,646	17%	100%	$0.06	176	176

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Food Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	88,907	10	$27,668	17%	100%	$0.05	13	13
Washington	Food Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	96,514	20	$68,888	8.3%	100%	$0.03	429	429
Washington	Food Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	76,216	2	$12,060	75%	100%	$0.01	397	397
Washington	Food Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	77,882	10	$52,536	35%	100%	$0.13	607	607
Washington	Food Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	2,027	10	$55,536	34%	100%	$0.01	342	342
Washington	Food Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	45,575	2	$26,055	65%	100%	$0.02	505	505
Washington	Food Mfg	Process Other	Facility Energy Management			Per Industry	Existing	5,922	2	$123	75%	100%	$0.01	4	4
Washington	Food Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	52,448	10	$41,241	34%	100%	$0.02	673	673
Washington	Food Mfg	Process Refrig	Cold Storage Retrofit			Per Industry	Existing	46,968	10	$11,854	39%	100%	$0.02	1,094	1,094
Washington	Food Mfg	Process Refrig	Cold Storage Tuneup			Per Industry	Existing	80,304	3	$25,124	66%	100%	$0.02	1,750	1,750
Washington	Food Mfg	Process Refrig	Food: Cooling and Storage			Per Industry	Existing	67,390	10	$30,217	15%	100%	$0.04	382	382
Washington	Food Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	9,838	3	$48,956	3.0%	100%	$0.02	66	66
Washington	Food Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	6,502	10	$44,177	21%	100%	$0.03	39	39
Washington	Food Mfg	Pumps	Facility Energy Management			Per Industry	Existing	89,471	2	$3,965	60%	100%	$0.01	104	104
Washington	Food Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	52,710	15	$66,484	74%	100%	$0.05	103	103
Washington	Food Mfg	Pumps	Motor rewinds			Per Industry	Existing	61,211	9	$14,634	5.2%	100%	$0.04	2	2
Washington	Food Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	58,285	12	$57,285	33%	100%	$0.05	625	625
Washington	Food Mfg	Pumps	Pump System Optimization			Per Industry	Existing	45,000	12	$20,018	15%	100%	$-0.02	173	173
Washington	Food Mfg	Pumps	Synchronous Belts			Per Industry	Existing	15,191	10	$24,643	21%	100%	$0.03	21	21
Washington	Industrial Machinery	Fans	Facility Energy Management			Per Industry	Existing	18,208	2	$2,474	6.6%	100%	$0.01	7	7
Washington	Industrial Machinery	Fans	Fan Equipment Upgrade			Per Industry	Existing	47,231	10	$92,619	23%	100%	$0.04	475	475
Washington	Industrial Machinery	Fans	Fan System Optimization			Per Industry	Existing	93,678	10	$788	30%	100%	$0.03	136	136
Washington	Industrial Machinery	Fans	High Efficiency Motors			Per Industry	Existing	95,273	15	$41,478	76%	100%	$0.05	66	66
Washington	Industrial Machinery	Fans	Improved Controls - Fans			Per Industry	Existing	93,989	10	$35,606	34%	100%	$0.04	124	124
Washington	Industrial Machinery	Fans	Properly Sized Fans			Per Industry	Existing	69,103	10	$6,445	15%	100%	$0.02	94	94
Washington	Industrial Machinery	Fans	Synchronous Belts			Per Industry	Existing	71,866	10	$15,374	21%	100%	$0.03	14	14
Washington	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	25,249	15	$91,939	14%	100%	$0.02	77	77
Washington	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	95,582	15	$87,198	5.0%	100%	$0.01	91	91
Washington	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	81,264	20	$1,859	1.0%	100%	$0.01	41	41

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Industrial Machinery	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	93,754	20	$619	6.5%	100%	$0.01	89	89
Washington	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	32,222	20	$47,536	2.5%	100%	$0.01	76	76
Washington	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	64,612	15	$67,184	45%	100%	$0.02	192	192
Washington	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	87,343	15	$35,158	20%	100%	$0.01	218	218
Washington	Industrial Machinery	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	31,204	15	$9,831	2.5%	100%	$0.00	226	226
Washington	Industrial Machinery	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	69,371	30	$91,114	4.0%	100%	$0.01	153	153
Washington	Industrial Machinery	Hvac	Improved Controls - HVAC			Per Industry	Existing	20,062	10	$87,247	33%	100%	$0.01	1,144	1,144
Washington	Industrial Machinery	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	90,507	10	$24,421	74%	100%	$0.00	608	608
Washington	Industrial Machinery	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	6,884	15	$2,927	0.0%	100%	$0.25	0.00	0.00
Washington	Industrial Machinery	Lighting	Facility Energy Management			Per Industry	Existing	43,940	2	$5,105	75%	100%	$0.01	168	168
Washington	Industrial Machinery	Lighting	Induction (High Bay)			Per Industry	Existing	43,524	20	$38,723	0.0%	100%	$3.44	0.00	0.00
Washington	Industrial Machinery	Lighting	LED (High Bay)			Per Industry	Existing	49,498	20	$13,982	2.1%	100%	$1.61	47	47
Washington	Industrial Machinery	Lighting	Lighting Controls			Per Industry	Existing	40,686	10	$12,744	28%	100%	$0.02	633	633
Washington	Industrial Machinery	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	53,581	15	$27,659	40%	100%	$0.33	1,017	1,017
Washington	Industrial Machinery	Lighting	Metal Halide (High Bay)			Per Industry	Existing	42,071	15	$15,559	0.0%	100%	$0.21	0.00	0.00
Washington	Industrial Machinery	Lighting	Screw Base CFL			Per Industry	Existing	24,537	4	$19,715	10%	100%	$-0.00	1,023	1,023
Washington	Industrial Machinery	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	97,577	1	$73,014	0.0%	100%	$0.00	0.00	0.00
Washington	Industrial Machinery	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	63,554	1	$51,905	0.0%	100%	$-0.01	0.00	0.00
Washington	Industrial Machinery	Lighting	Screw Base LED			Per Industry	Existing	12,041	12	$99,129	1.8%	100%	$0.02	182	182
Washington	Industrial Machinery	Lighting	T5 Linear Florescent			Per Industry	Existing	89,648	13	$14,732	11%	100%	$0.49	415	415
Washington	Industrial Machinery	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	25,441	13	$38,979	34%	100%	$0.10	1,007	1,007
Washington	Industrial Machinery	Lighting	T8 Linear Florescent			Per Industry	Existing	89,027	13	$45,623	0.0%	100%	$0.12	0.00	0.00
Washington	Industrial Machinery	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	36,748	13	$51,371	0.0%	100%	$0.13	0.00	0.00
Washington	Industrial Machinery	Motors Other	Facility Energy Management			Per Industry	Existing	36,505	2	$7,043	75%	100%	$0.01	232	232
Washington	Industrial Machinery	Motors Other	High Efficiency Motors			Per Industry	Existing	71,216	15	$18,077	75%	100%	$0.05	187	187

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Industrial Machinery	Motors Other	Improved Controls - Motors			Per Industry	Existing	34,725	10	$65,746	34%	100%	$0.02	196	196
Washington	Industrial Machinery	Motors Other	Motors Other			Per Industry	Existing	45,020	15	$2,644	90%	100%	$0.00	120	120
Washington	Industrial Machinery	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	1,167	10	$23,087	6.7%	100%	$0.03	6	6
Washington	Industrial Machinery	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	88,190	11.2	$67,849	4.7%	100%	$0.05	8	8
Washington	Industrial Machinery	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	37	8	$14,512	4.0%	100%	$0.02	3	3
Washington	Industrial Machinery	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,878	8	$10,361	4.0%	100%	$0.02	3	3
Washington	Industrial Machinery	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	9,810	9	$33,491	7.1%	100%	$0.05	7	7
Washington	Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	70,834	12	$93,263	10%	100%	$0.03	132	132
Washington	Industrial Machinery	Motors Other	Synchronous Belts			Per Industry	Existing	4,582	10	$43,766	21%	100%	$0.03	39	39
Washington	Industrial Machinery	Other	Bldg Improvements			Per Industry	Existing	89,456	15	$81,690	35%	100%	$0.02	447	447
Washington	Industrial Machinery	Other	Facility Energy Management			Per Industry	Existing	25,393	2	$2,624	75%	100%	$0.01	86	86
Washington	Industrial Machinery	Other	Transformers			Per Industry	Existing	8,974	30	$21,759	20%	100%	$0.02	20	20
Washington	Industrial Machinery	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	80,253	10	$60,867	26%	100%	$0.03	282	282
Washington	Industrial Machinery	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	386	10	$58,927	17%	100%	$0.03	235	235
Washington	Industrial Machinery	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	28,162	10	$40,668	30%	100%	$-0.01	608	608
Washington	Industrial Machinery	Process Aircomp	Facility Energy Management			Per Industry	Existing	36,327	2	$2,853	42%	100%	$0.01	52	52
Washington	Industrial Machinery	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	81,260	15	$27,908	75%	100%	$0.04	56	56
Washington	Industrial Machinery	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	78,154	10	$44,343	3.2%	100%	$0.00	40	40
Washington	Industrial Machinery	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	36,249	10	$84,037	36%	100%	$0.09	44	44
Washington	Industrial Machinery	Process Aircomp	Outside Air Intake			Per Industry	Existing	5,889	10	$48,688	36%	100%	$0.07	34	34
Washington	Industrial Machinery	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	39,848	10	$37,727	17%	100%	$0.05	68	68
Washington	Industrial Machinery	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	23,273	10	$17,017	17%	100%	$0.02	19	19
Washington	Industrial Machinery	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	54,949	10	$28,916	17%	100%	$0.06	275	275
Washington	Industrial Machinery	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	36,249	10	$42,401	17%	100%	$0.05	21	21
Washington	Industrial Machinery	Process Cool	Equipment: Chillers			Per Industry	Existing	64,146	20	$48,068	8.0%	100%	$0.03	41	41
Washington	Industrial Machinery	Process Cool	Facility Energy Management			Per Industry	Existing	58,084	2	$1,215	75%	100%	$0.01	40	40
Washington	Industrial Machinery	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	89,296	10	$66,580	34%	100%	$0.13	58	58
Washington	Industrial Machinery	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	63,236	10	$3,976	36%	100%	$0.01	688	688
Washington	Industrial Machinery	Process Heat	Process Heat O&M			Per Industry	Existing	83,102	2	$48,782	70%	100%	$0.02	1,017	1,017
Washington	Industrial Machinery	Process Other	Facility Energy Management			Per Industry	Existing	9,656	2	$202	75%	100%	$0.01	6	6

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Industrial Machinery	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	66,342	10	$58,078	34%	100%	$0.02	114	114
Washington	Industrial Machinery	Process Refrig	Optimization of operating parameters			Per Industry	Existing	10,150	3	$25,352	85%	100%	$0.02	320	320
Washington	Industrial Machinery	Process Refrig	Synchronous Belts			Per Industry	Existing	35,146	10	$7,518	21%	100%	$0.03	6	6
Washington	Industrial Machinery	Pumps	Facility Energy Management			Per Industry	Existing	13,983	2	$4,478	75%	100%	$0.01	147	147
Washington	Industrial Machinery	Pumps	High Efficiency Motors			Per Industry	Existing	72,466	15	$75,085	76%	100%	$0.05	119	119
Washington	Industrial Machinery	Pumps	Motor rewinds			Per Industry	Existing	69,129	9	$16,528	5.3%	100%	$0.04	3	3
Washington	Industrial Machinery	Pumps	Synchronous Belts			Per Industry	Existing	30,093	10	$27,831	21%	100%	$0.03	25	25
Washington	Lumber Wood Products	Fans	Efficient Centrifugal Fan			Per Industry	Existing	45,801	10	$90,145	11%	100%	$0.03	103	103
Washington	Lumber Wood Products	Fans	Facility Energy Management			Per Industry	Existing	96,269	2	$2,014	3.0%	100%	$0.01	2	2
Washington	Lumber Wood Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	30,153	10	$56,870	23%	100%	$0.04	387	387
Washington	Lumber Wood Products	Fans	Fan System Optimization			Per Industry	Existing	2,053	10	$82,082	30%	100%	$0.03	111	111
Washington	Lumber Wood Products	Fans	High Efficiency Motors			Per Industry	Existing	77,591	15	$33,780	77%	100%	$0.05	54	54
Washington	Lumber Wood Products	Fans	Improved Controls - Fans			Per Industry	Existing	20,866	10	$28,998	34%	100%	$0.04	101	101
Washington	Lumber Wood Products	Fans	Properly Sized Fans			Per Industry	Existing	44,920	10	$86,689	15%	100%	$0.02	76	76
Washington	Lumber Wood Products	Fans	Synchronous Belts			Per Industry	Existing	58,528	10	$12,520	21%	100%	$0.03	11	11
Washington	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	25,772	15	$18,494	14%	100%	$0.02	15	15
Washington	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	1,422	15	$37,656	5.0%	100%	$0.01	18	18
Washington	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	1,431	20	$21,067	1.0%	100%	$0.01	8	8
Washington	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	477	20	$40,355	6.5%	100%	$0.01	17	17
Washington	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	70,295	20	$90,024	2.5%	100%	$0.01	15	15
Washington	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	93,459	15	$13,514	45%	100%	$0.02	38	38
Washington	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	38,840	15	$27,187	20%	100%	$0.01	43	43

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lumber Wood Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	77,602	15	$1,977	2.5%	100%	$0.00	45	45
Washington	Lumber Wood Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	38,692	30	$78,674	4.0%	100%	$0.01	30	30
Washington	Lumber Wood Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	48,311	10	$37,665	33%	100%	$0.01	225	225
Washington	Lumber Wood Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	79,130	10	$4,912	73%	100%	$0.00	120	120
Washington	Lumber Wood Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	31,623	15	$60,143	0.0%	100%	$0.25	0.00	0.00
Washington	Lumber Wood Products	Lighting	Facility Energy Management			Per Industry	Existing	69,817	2	$1,461	75%	100%	$0.01	48	48
Washington	Lumber Wood Products	Lighting	Induction (High Bay)			Per Industry	Existing	12,801	20	$38,299	0.0%	100%	$3.44	0.00	0.00
Washington	Lumber Wood Products	Lighting	LED (High Bay)			Per Industry	Existing	1,061	20	$66,378	2.1%	100%	$1.61	13	13
Washington	Lumber Wood Products	Lighting	Lighting Controls			Per Industry	Existing	98,538	10	$89,509	28%	100%	$0.02	181	181
Washington	Lumber Wood Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	88,091	15	$54,805	40%	100%	$0.33	291	291
Washington	Lumber Wood Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	41,350	15	$20,312	0.0%	100%	$0.21	0.00	0.00
Washington	Lumber Wood Products	Lighting	Screw Base CFL			Per Industry	Existing	40,805	4	$62,883	10%	100%	$-0.00	292	292
Washington	Lumber Wood Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	61,021	1	$49,517	0.0%	100%	$0.00	0.00	0.00
Washington	Lumber Wood Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	33,704	1	$43,476	0.0%	100%	$-0.01	0.00	0.00
Washington	Lumber Wood Products	Lighting	Screw Base LED			Per Industry	Existing	65,850	12	$14,921	1.8%	100%	$0.02	52	52
Washington	Lumber Wood Products	Lighting	T5 Linear Florescent			Per Industry	Existing	41,861	13	$68,685	11%	100%	$0.49	118	118
Washington	Lumber Wood Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	23,140	13	$26,671	34%	100%	$0.10	288	288
Washington	Lumber Wood Products	Lighting	T8 Linear Florescent			Per Industry	Existing	12,374	13	$71,331	0.0%	100%	$0.12	0.00	0.00
Washington	Lumber Wood Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	54,997	13	$59,182	0.0%	100%	$0.13	0.00	0.00
Washington	Lumber Wood Products	Motors Other	Facility Energy Management			Per Industry	Existing	74,051	2	$5,735	75%	100%	$0.01	189	189

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Lumber Wood Products	Motors Other	High Efficiency Motors			Per Industry	Existing	20,879	15	$96,162	75%	100%	$0.05	153	153
Washington	Lumber Wood Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	16,922	10	$53,544	34%	100%	$0.02	161	161
Washington	Lumber Wood Products	Motors Other	Material Handling			Per Industry	Existing	45,698	10	$48,457	53%	100%	$0.07	365	365
Washington	Lumber Wood Products	Motors Other	Material Handling VFD			Per Industry	Existing	87,657	10	$36,297	53%	100%	$0.04	1,364	1,364
Washington	Lumber Wood Products	Motors Other	Motors Other			Per Industry	Existing	18,105	15	$2,153	90%	100%	$0.00	98	98
Washington	Lumber Wood Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	82,390	10	$18,802	6.8%	100%	$0.03	5	5
Washington	Lumber Wood Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	53,263	11.2	$55,256	4.7%	100%	$0.05	6	6
Washington	Lumber Wood Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	81,471	8	$11,818	4.0%	100%	$0.02	3	3
Washington	Lumber Wood Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	82,969	8	$8,438	4.0%	100%	$0.02	3	3
Washington	Lumber Wood Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	89,430	9	$27,275	7.1%	100%	$0.05	5	5
Washington	Lumber Wood Products	Motors Other	Panel: Hydraulic Press			Per Industry	Existing	67,940	10	$35,795	28%	100%	$0.03	1,074	1,074
Washington	Lumber Wood Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	16,412	12	$38,834	11%	100%	$0.03	108	108
Washington	Lumber Wood Products	Motors Other	Synchronous Belts			Per Industry	Existing	66,613	10	$35,643	21%	100%	$0.03	32	32
Washington	Lumber Wood Products	Motors Other	Wood: Replace Pneumatic Conveyor			Per Industry	Existing	16,795	10	$62,593	50%	100%	$-0.06	1,993	1,993
Washington	Lumber Wood Products	Other	Bldg Improvements			Per Industry	Existing	41,948	15	$10,096	35%	100%	$0.02	271	271
Washington	Lumber Wood Products	Other	Facility Energy Management			Per Industry	Existing	75,982	2	$1,590	75%	100%	$0.01	52	52
Washington	Lumber Wood Products	Other	Transformers			Per Industry	Existing	66,033	30	$13,184	20%	100%	$0.02	12	12
Washington	Lumber Wood Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	61,202	10	$49,570	27%	100%	$0.03	237	237
Washington	Lumber Wood Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	21,919	10	$47,991	18%	100%	$0.03	197	197
Washington	Lumber Wood Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	14,623	10	$96,001	31%	100%	$-0.01	511	511
Washington	Lumber Wood Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	11,025	2	$2,323	41%	100%	$0.01	41	41

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Washington	Lumber Wood Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	66,178	15	$22,728	78%	100%	$0.04	47	47
Washington	Lumber Wood Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	22,373	10	$36,113	3.3%	100%	$0.00	34	34
Washington	Lumber Wood Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	10,961	10	$68,440	37%	100%	$0.09	37	37
Washington	Lumber Wood Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	86,236	10	$39,652	37%	100%	$0.07	29	29
Washington	Lumber Wood Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	58,213	10	$12,165	18%	100%	$0.05	57	57
Washington	Lumber Wood Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	394	10	$13,859	18%	100%	$0.02	16	16
Washington	Lumber Wood Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	29,237	10	$93,631	18%	100%	$0.06	231	231
Washington	Lumber Wood Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	10,961	10	$34,531	18%	100%	$0.05	17	17
Washington	Lumber Wood Products	Process Cool	Equipment: Chillers			Per Industry	Existing	59,883	20	$15,717	7.7%	100%	$0.03	4	4
Washington	Lumber Wood Products	Process Cool	Facility Energy Management			Per Industry	Existing	6,165	2	$129	75%	100%	$0.01	4	4
Washington	Lumber Wood Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	20,093	10	$17,682	32%	100%	$0.13	5	5
Washington	Lumber Wood Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	98,383	10	$40,234	33%	100%	$0.01	242	242
Washington	Lumber Wood Products	Process Heat	Process Heat O&M			Per Industry	Existing	12,592	2	$18,876	63%	100%	$0.02	357	357
Washington	Lumber Wood Products	Process Other	Facility Energy Management			Per Industry	Existing	1,685	2	$35	75%	100%	$0.01	1	1
Washington	Lumber Wood Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	98,350	10	$47,299	34%	100%	$0.02	93	93
Washington	Lumber Wood Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	34,027	3	$20,646	85%	100%	$0.02	261	261
Washington	Lumber Wood Products	Process Refrig	Synchronous Belts			Per Industry	Existing	28,623	10	$6,123	21%	100%	$0.03	5	5
Washington	Lumber Wood Products	Pumps	Facility Energy Management			Per Industry	Existing	74,268	2	$3,647	75%	100%	$0.01	120	120
Washington	Lumber Wood Products	Pumps	High Efficiency Motors			Per Industry	Existing	40,456	15	$61,149	72%	100%	$0.05	93	93
Washington	Lumber Wood Products	Pumps	Motor rewinds			Per Industry	Existing	56,299	9	$13,460	5.1%	100%	$0.04	2	2
Washington	Lumber Wood Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	93,130	12	$36,641	32%	100%	$0.05	563	563

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Washington	Lumber Wood Products	Pumps	Pump System Optimization			Per Industry	Existing	45,102	12	$94,340	75%	100%	$-0.02	790	790
Washington	Lumber Wood Products	Pumps	Synchronous Belts			Per Industry	Existing	5,948	10	$22,665	20%	100%	$0.03	19	19
Washington	Metal Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	27%	100%	.	0.00	0.00
Washington	Metal Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	73%	100%	.	0.00	0.00
Washington	Metal Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
Washington	Metal Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
Washington	Metal Mfg	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Washington	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	18,324	15	$17,398	14%	100%	$0.02	14	14
Washington	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	77,651	15	$35,426	5.0%	100%	$0.01	17	17
Washington	Metal Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	48,050	20	$13,898	1.0%	100%	$0.01	7	7
Washington	Metal Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	82,683	20	$37,966	6.5%	100%	$0.01	16	16
Washington	Metal Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	30,601	20	$84,693	2.5%	100%	$0.01	14	14
Washington	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	87,924	15	$12,714	45%	100%	$0.02	36	36
Washington	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	24,697	15	$25,577	20%	100%	$0.01	41	41
Washington	Metal Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	60,492	15	$1,860	2.5%	100%	$0.00	42	42
Washington	Metal Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	89,026	30	$74,015	4.0%	100%	$0.01	29	29
Washington	Metal Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	3,998	10	$35,435	34%	100%	$0.01	217	217
Washington	Metal Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	68,522	10	$4,621	75%	100%	$0.00	115	115
Washington	Metal Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	49,710	15	$97,211	0.0%	100%	$0.25	0.00	0.00
Washington	Metal Mfg	Lighting	Facility Energy Management			Per Industry	Existing	49,709	2	$1,040	75%	100%	$0.01	34	34
Washington	Metal Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	51,512	20	$67,200	0.0%	100%	$3.44	0.00	0.00
Washington	Metal Mfg	Lighting	LED (High Bay)			Per Industry	Existing	99,149	20	$92,757	2.1%	100%	$1.61	9	9
Washington	Metal Mfg	Lighting	Lighting Controls			Per Industry	Existing	97,353	10	$63,729	28%	100%	$0.02	129	129
Washington	Metal Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	61,114	15	$76,599	40%	100%	$0.33	207	207
Washington	Metal Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	14,237	15	$55,253	0.0%	100%	$0.21	0.00	0.00
Washington	Metal Mfg	Lighting	Screw Base CFL			Per Industry	Existing	65,026	4	$44,772	10%	100%	$-0.00	208	208

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Washington	Metal Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	94,623	1	$35,256	0.0%	100%	$0.00	0.00	0.00
Washington	Metal Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	22,391	1	$30,954	0.0%	100%	$-0.01	0.00	0.00
Washington	Metal Mfg	Lighting	Screw Base LED			Per Industry	Existing	82,857	12	$66,619	1.8%	100%	$0.02	37	37
Washington	Metal Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	12,994	13	$39,265	11%	100%	$0.49	84	84
Washington	Metal Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	57,267	13	$17,383	34%	100%	$0.10	205	205
Washington	Metal Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	7,204	13	$77,981	0.0%	100%	$0.12	0.00	0.00
Washington	Metal Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	79,949	13	$82,929	0.0%	100%	$0.13	0.00	0.00
Washington	Metal Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	34,664	2	$7,004	75%	100%	$0.01	231	231
Washington	Metal Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	69,732	15	$17,430	74%	100%	$0.05	184	184
Washington	Metal Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	31,251	10	$65,386	33%	100%	$0.02	193	193
Washington	Metal Mfg	Motors Other	Motors Other			Per Industry	Existing	44,226	15	$2,630	89%	100%	$0.00	118	118
Washington	Metal Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	613	10	$22,960	6.7%	100%	$0.03	6	6
Washington	Metal Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	87,160	11.2	$67,478	4.6%	100%	$0.05	8	8
Washington	Metal Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	99,490	8	$14,432	3.9%	100%	$0.02	3	3
Washington	Metal Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	1,320	8	$10,305	3.9%	100%	$0.02	3	3
Washington	Metal Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	9,209	9	$33,307	7.0%	100%	$0.05	7	7
Washington	Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	63,331	12	$91,658	10%	100%	$0.03	130	130
Washington	Metal Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	3,463	10	$43,526	21%	100%	$0.03	38	38
Washington	Metal Mfg	Other	Bldg Improvements			Per Industry	Existing	46,536	15	$32,237	35%	100%	$0.02	79	79
Washington	Metal Mfg	Other	Facility Energy Management			Per Industry	Existing	22,248	2	$465	75%	100%	$0.01	15	15
Washington	Metal Mfg	Other	Transformers			Per Industry	Existing	19,335	30	$3,860	20%	100%	$0.02	3	3
Washington	Metal Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	72,596	10	$34,686	25%	100%	$0.03	156	156
Washington	Metal Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	55,032	10	$33,581	17%	100%	$0.03	130	130
Washington	Metal Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	69,773	10	$37,150	29%	100%	$-0.01	337	337
Washington	Metal Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	77,689	2	$1,626	43%	100%	$0.01	30	30
Washington	Metal Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	46,308	15	$15,904	73%	100%	$0.04	31	31
Washington	Metal Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	85,375	10	$25,270	3.1%	100%	$0.00	22	22
Washington	Metal Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	77,645	10	$47,890	35%	100%	$0.09	24	24
Washington	Metal Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	60,343	10	$27,746	35%	100%	$0.07	19	19
Washington	Metal Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	50,658	10	$78,487	17%	100%	$0.05	38	38
Washington	Metal Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	70,250	10	$9,697	17%	100%	$0.02	10	10
Washington	Metal Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	101	10	$15,390	17%	100%	$0.06	152	152

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Metal Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	77,645	10	$24,163	17%	100%	$0.05	11	11
Washington	Metal Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	34,390	20	$35,272	8.0%	100%	$0.03	9	9
Washington	Metal Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	13,836	2	$289	75%	100%	$0.01	9	9
Washington	Metal Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	45,093	10	$39,682	34%	100%	$0.13	14	14
Washington	Metal Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	10,393	10	$73,445	35%	100%	$0.01	2,378	2,378
Washington	Metal Mfg	Process Heat	Metal: New Arc Furnace			Per Industry	Existing	2,732	10	$71,251	7.3%	100%	$-1.95	782	782
Washington	Metal Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	85,924	2	$75,208	67%	100%	$0.02	3,515	3,515
Washington	Metal Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Metal Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Washington	Metal Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
Washington	Metal Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Washington	Metal Mfg	Pumps	Facility Energy Management			Per Industry	Existing	47,265	2	$989	75%	100%	$0.01	32	32
Washington	Metal Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	38,095	15	$16,585	72%	100%	$0.05	25	25
Washington	Metal Mfg	Pumps	Motor rewinds			Per Industry	Existing	15,269	9	$3,650	5.1%	100%	$0.04	0.71	0.71
Washington	Metal Mfg	Pumps	Synchronous Belts			Per Industry	Existing	28,735	10	$6,147	20%	100%	$0.03	5	5
Washington	Mining	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	25%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	25%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	0.0%	100%	.	0.00	0.00
Washington	Mining	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Washington	Mining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
Washington	Miscellaneous Mfg	Fans	Facility Energy Management			Per Industry	Existing	8,448	2	$2,269	5.5%	100%	$0.01	5	5
Washington	Miscellaneous Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	61,681	10	$76,715	23%	100%	$0.04	436	436
Washington	Miscellaneous Mfg	Fans	Fan System Optimization			Per Industry	Existing	52,915	10	$92,466	30%	100%	$0.03	125	125

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous Mfg	Fans	High Efficiency Motors			Per Industry	Existing	87,406	15	$38,053	76%	100%	$0.05	61	61
Washington	Miscellaneous Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	61,458	10	$32,666	34%	100%	$0.04	114	114
Washington	Miscellaneous Mfg	Fans	Properly Sized Fans			Per Industry	Existing	13,856	10	$97,656	15%	100%	$0.02	86	86
Washington	Miscellaneous Mfg	Fans	Synchronous Belts			Per Industry	Existing	65,932	10	$14,104	21%	100%	$0.03	12	12
Washington	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	55,814	15	$11,138	14%	100%	$0.02	93	93
Washington	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	12,299	15	$26,289	5.0%	100%	$0.01	111	111
Washington	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	17,040	20	$27,539	1.0%	100%	$0.01	49	49
Washington	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	5,680	20	$42,513	6.5%	100%	$0.01	108	108
Washington	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	28,055	20	$40,991	2.5%	100%	$0.01	92	92
Washington	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	61,632	15	$81,213	45%	100%	$0.02	232	232
Washington	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	35,284	15	$63,381	20%	100%	$0.01	264	264
Washington	Miscellaneous Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	84,153	15	$11,884	2.5%	100%	$0.00	273	273
Washington	Miscellaneous Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	40,018	30	$72,786	4.0%	100%	$0.01	185	185
Washington	Miscellaneous Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	96,885	10	$26,348	33%	100%	$0.01	1,383	1,383
Washington	Miscellaneous Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	76,463	10	$29,521	74%	100%	$0.00	736	736
Washington	Miscellaneous Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	70,126	15	$27,625	0.0%	100%	$0.25	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	Facility Energy Management			Per Industry	Existing	84,091	2	$5,946	75%	100%	$0.01	196	196
Washington	Miscellaneous Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	65,904	20	$73,937	0.0%	100%	$3.44	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	LED (High Bay)			Per Industry	Existing	52,672	20	$50,693	2.1%	100%	$1.61	55	55
Washington	Miscellaneous Mfg	Lighting	Lighting Controls			Per Industry	Existing	42,410	10	$64,220	28%	100%	$0.02	738	738
Washington	Miscellaneous Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	6,806	15	$81,888	40%	100%	$0.33	1,184	1,184
Washington	Miscellaneous Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	95,888	15	$44,823	0.0%	100%	$0.21	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	Screw Base CFL			Per Industry	Existing	73,279	4	$55,879	10%	100%	$-0.00	1,192	1,192

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	27,909	1	$1,491	0.0%	100%	$0.00	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	85,502	1	$76,908	0.0%	100%	$-0.01	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	Screw Base LED			Per Industry	Existing	75,187	12	$95,257	1.8%	100%	$0.02	212	212
Washington	Miscellaneous Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	46,323	13	$69,618	11%	100%	$0.49	483	483
Washington	Miscellaneous Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	56,331	13	$56,881	34%	100%	$0.10	1,173	1,173
Washington	Miscellaneous Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	98,708	13	$31,701	0.0%	100%	$0.12	0.00	0.00
Washington	Miscellaneous Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	85,959	13	$2,989	0.0%	100%	$0.13	0.00	0.00
Washington	Miscellaneous Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	36,627	2	$9,138	75%	100%	$0.01	301	301
Washington	Miscellaneous Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	51,913	15	$53,209	75%	100%	$0.05	242	242
Washington	Miscellaneous Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	23,578	10	$85,308	34%	100%	$0.02	255	255
Washington	Miscellaneous Mfg	Motors Other	Motors Other			Per Industry	Existing	88,168	15	$3,431	90%	100%	$0.00	155	155
Washington	Miscellaneous Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	31,267	10	$29,956	6.7%	100%	$0.03	8	8
Washington	Miscellaneous Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	44,183	11.2	$88,037	4.7%	100%	$0.05	10	10
Washington	Miscellaneous Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	29,802	8	$18,829	4.0%	100%	$0.02	4	4
Washington	Miscellaneous Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	32,190	8	$13,444	4.0%	100%	$0.02	4	4
Washington	Miscellaneous Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	42,482	9	$43,456	7.1%	100%	$0.05	9	9
Washington	Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	78,705	12	$80,519	10%	100%	$0.03	171	171
Washington	Miscellaneous Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	65,453	10	$56,788	21%	100%	$0.03	51	51
Washington	Miscellaneous Mfg	Other	Bldg Improvements			Per Industry	Existing	17,369	15	$19,958	35%	100%	$0.02	295	295
Washington	Miscellaneous Mfg	Other	Facility Energy Management			Per Industry	Existing	82,789	2	$1,732	75%	100%	$0.01	57	57
Washington	Miscellaneous Mfg	Other	Transformers			Per Industry	Existing	71,949	30	$14,366	20%	100%	$0.02	13	13
Washington	Miscellaneous Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	77,520	10	$45,254	26%	100%	$0.03	209	209
Washington	Miscellaneous Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	1,360	2	$2,121	72%	100%	$0.01	67	67
Washington	Miscellaneous Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	60,416	15	$20,750	75%	100%	$0.04	41	41
Washington	Miscellaneous Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	24,659	10	$32,969	3.2%	100%	$0.00	30	30
Washington	Miscellaneous Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	1,301	10	$62,481	36%	100%	$0.09	33	33
Washington	Miscellaneous Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	78,728	10	$36,200	36%	100%	$0.07	25	25
Washington	Miscellaneous Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	27,027	10	$2,400	17%	100%	$0.05	51	51
Washington	Miscellaneous Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	91,653	10	$12,652	17%	100%	$0.02	14	14
Washington	Miscellaneous Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	4,807	10	$41,950	17%	100%	$0.06	204	204

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Miscellaneous Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	1,301	10	$31,525	17%	100%	$0.05	15	15
Washington	Miscellaneous Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	30,868	20	$96,813	8.0%	100%	$0.03	83	83
Washington	Miscellaneous Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	16,434	2	$2,436	75%	100%	$0.01	80	80
Washington	Miscellaneous Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	79,457	10	$33,922	34%	100%	$0.13	117	117
Washington	Miscellaneous Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	12,012	10	$41,710	36%	100%	$0.01	938	938
Washington	Miscellaneous Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	57,629	2	$66,485	70%	100%	$0.02	1,386	1,386
Washington	Miscellaneous Mfg	Process Other	Facility Energy Management			Per Industry	Existing	8,505	2	$178	75%	100%	$0.01	5	5
Washington	Miscellaneous Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	4,491	10	$712	34%	100%	$0.02	1	1
Washington	Miscellaneous Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	5,028	3	$310	85%	100%	$0.02	3	3
Washington	Miscellaneous Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	430	10	$92	21%	100%	$0.03	0.08	0.08
Washington	Miscellaneous Mfg	Pumps	Facility Energy Management			Per Industry	Existing	61,666	2	$1,290	60%	100%	$0.01	33	33
Washington	Miscellaneous Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	49,702	15	$21,638	76%	100%	$0.05	34	34
Washington	Miscellaneous Mfg	Pumps	Motor rewinds			Per Industry	Existing	19,922	9	$4,763	5.3%	100%	$0.04	0.97	0.97
Washington	Miscellaneous Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	69,901	12	$83,737	34%	100%	$0.05	208	208
Washington	Miscellaneous Mfg	Pumps	Pump System Optimization			Per Industry	Existing	5,205	12	$4,155	16%	100%	$-0.02	57	57
Washington	Miscellaneous Mfg	Pumps	Synchronous Belts			Per Industry	Existing	37,490	10	$8,020	21%	100%	$0.03	7	7
Washington	Paper Mfg	Fans	Efficient Centrifugal Fan			Per Industry	Existing	46,302	10	$81,145	8.5%	100%	$0.03	121	121
Washington	Paper Mfg	Fans	Facility Energy Management			Per Industry	Existing	42,342	2	$2,979	12%	100%	$0.01	15	15
Washington	Paper Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	6,029	10	$31,945	14%	100%	$0.04	346	346
Washington	Paper Mfg	Fans	Fan System Optimization			Per Industry	Existing	94,468	10	$21,365	24%	100%	$0.03	131	131
Washington	Paper Mfg	Fans	High Efficiency Motors			Per Industry	Existing	14,724	15	$49,946	61%	100%	$0.05	64	64
Washington	Paper Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	74,427	10	$42,876	27%	100%	$0.04	119	119
Washington	Paper Mfg	Fans	Paper: Premium Fan			Per Industry	Existing	46,302	10	$81,145	20%	100%	$0.03	288	288
Washington	Paper Mfg	Fans	Properly Sized Fans			Per Industry	Existing	5,708	10	$28,177	12%	100%	$0.02	90	90
Washington	Paper Mfg	Fans	Synchronous Belts			Per Industry	Existing	86,538	10	$18,513	17%	100%	$0.03	13	13
Washington	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	68,972	15	$10,142	14%	100%	$0.02	8	8
Washington	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	20,137	15	$20,650	5.0%	100%	$0.01	10	10
Washington	Paper Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	94,339	20	$66,392	1.0%	100%	$0.01	4	4
Washington	Paper Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	64,779	20	$22,130	6.5%	100%	$0.01	9	9

Table C-2.3. Industrial Measure Details

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Washington	Paper Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	67,585	20	$49,368	2.5%	100%	$0.01	8	8
Washington	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	51,252	15	$7,411	45%	100%	$0.02	21	21
Washington	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	30,978	15	$14,909	20%	100%	$0.01	24	24
Washington	Paper Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	84,504	15	$1,084	2.5%	100%	$0.00	24	24
Washington	Paper Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	59,933	30	$43,144	4.0%	100%	$0.01	16	16
Washington	Paper Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	10,369	10	$20,655	32%	100%	$0.01	122	122
Washington	Paper Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	98,234	10	$2,694	72%	100%	$0.00	65	65
Washington	Paper Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	17,006	15	$32,456	0.0%	100%	$0.25	0.00	0.00
Washington	Paper Mfg	Lighting	Facility Energy Management			Per Industry	Existing	35,040	2	$733	75%	100%	$0.01	24	24
Washington	Paper Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	6,803	20	$83,412	0.0%	100%	$3.44	0.00	0.00
Washington	Paper Mfg	Lighting	LED (High Bay)			Per Industry	Existing	51,856	20	$4,695	2.1%	100%	$1.61	6	6
Washington	Paper Mfg	Lighting	Lighting Controls			Per Industry	Existing	50,591	10	$44,923	28%	100%	$0.02	91	91
Washington	Paper Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	95,536	15	$81,858	40%	100%	$0.33	146	146
Washington	Paper Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	21,510	15	$61,897	0.0%	100%	$0.21	0.00	0.00
Washington	Paper Mfg	Lighting	Screw Base CFL			Per Industry	Existing	26,156	4	$31,560	10%	100%	$-0.00	147	147
Washington	Paper Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	35,545	1	$24,852	0.0%	100%	$0.00	0.00	0.00
Washington	Paper Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	68,240	1	$21,820	0.0%	100%	$-0.01	0.00	0.00
Washington	Paper Mfg	Lighting	Screw Base LED			Per Industry	Existing	38,725	12	$58,435	1.8%	100%	$0.02	26	26
Washington	Paper Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	73,091	13	$42,419	11%	100%	$0.49	59	59
Washington	Paper Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	63,316	13	$64,710	34%	100%	$0.10	144	144
Washington	Paper Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	57,535	13	$36,935	0.0%	100%	$0.12	0.00	0.00
Washington	Paper Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	79,305	13	$81,406	0.0%	100%	$0.13	0.00	0.00
Washington	Paper Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	81,808	2	$5,898	75%	100%	$0.01	194	194
Washington	Paper Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	27,131	15	$98,884	60%	100%	$0.05	125	125
Washington	Paper Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	31,554	10	$55,059	27%	100%	$0.02	131	131
Washington	Paper Mfg	Motors Other	Material Handling			Per Industry	Existing	66,805	10	$58,320	42%	100%	$0.07	298	298
Washington	Paper Mfg	Motors Other	Material Handling VFD			Per Industry	Existing	66,561	10	$59,968	42%	100%	$0.04	1,116	1,116
Washington	Paper Mfg	Motors Other	Motors Other			Per Industry	Existing	21,448	15	$2,214	72%	100%	$0.00	80	80

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Paper Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	84,722	10	$19,334	5.4%	100%	$0.03	4	4
Washington	Paper Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	57,601	11.2	$56,820	3.8%	100%	$0.05	5	5
Washington	Paper Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	83,777	8	$12,153	3.2%	100%	$0.02	2	2
Washington	Paper Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	85,318	8	$8,677	3.2%	100%	$0.02	2	2
Washington	Paper Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	91,961	9	$28,047	5.6%	100%	$0.05	4	4
Washington	Paper Mfg	Motors Other	Paper: Large Material Handling			Per Industry	Existing	90,612	10	$46,624	20%	100%	$0.11	273	273
Washington	Paper Mfg	Motors Other	Paper: Material Handling			Per Industry	Existing	6,593	10	$89,952	20%	100%	$0.09	368	368
Washington	Paper Mfg	Motors Other	Paper: Premium Control Large Material			Per Industry	Existing	66,561	10	$61,287	20%	100%	$0.06	526	526
Washington	Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	48,012	12	$45,594	8.4%	100%	$0.03	88	88
Washington	Paper Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	71,329	10	$36,652	17%	100%	$0.03	26	26
Washington	Paper Mfg	Other	Bldg Improvements			Per Industry	Existing	7,264	15	$27,102	35%	100%	$0.02	66	66
Washington	Paper Mfg	Other	Facility Energy Management			Per Industry	Existing	18,704	2	$391	75%	100%	$0.01	12	12
Washington	Paper Mfg	Other	Transformers			Per Industry	Existing	16,255	30	$3,245	20%	100%	$0.02	2	2
Washington	Paper Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	86,296	10	$14,764	20%	100%	$0.03	53	53
Washington	Paper Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	63,951	10	$14,294	13%	100%	$0.03	43	43
Washington	Paper Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	40,490	10	$58,379	23%	100%	$-0.01	111	111
Washington	Paper Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	33,069	2	$692	50%	100%	$0.01	15	15
Washington	Paper Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	19,711	15	$6,769	59%	100%	$0.04	10	10
Washington	Paper Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	34,301	10	$10,756	2.4%	100%	$0.00	7	7
Washington	Paper Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	33,050	10	$20,385	27%	100%	$0.09	8	8
Washington	Paper Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	25,685	10	$11,810	27%	100%	$0.07	6	6
Washington	Paper Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	6,694	10	$33,408	13%	100%	$0.05	12	12
Washington	Paper Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	29,902	10	$4,128	13%	100%	$0.02	3	3
Washington	Paper Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	25,701	10	$76,814	13%	100%	$0.06	50	50
Washington	Paper Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	33,050	10	$10,285	13%	100%	$0.05	3	3
Washington	Paper Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	29,335	20	$33,946	8.0%	100%	$0.03	9	9
Washington	Paper Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	13,316	2	$278	75%	100%	$0.01	9	9
Washington	Paper Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	43,397	10	$38,190	34%	100%	$0.13	13	13
Washington	Paper Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	45,176	10	$17,395	33%	100%	$0.01	105	105
Washington	Paper Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	64,850	2	$8,161	64%	100%	$0.02	155	155
Washington	Paper Mfg	Process Other	Facility Energy Management			Per Industry	Existing	4,296	2	$89	75%	100%	$0.01	2	2

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Paper Mfg	Process Other	Kraft: Efficient Agitator			Per Industry	Existing	16,695	10	$9,778	11%	100%	$0.01	11	11
Washington	Paper Mfg	Process Other	Kraft: Effluent Treatment System			Per Industry	Existing	35,008	10	$2,597	7.3%	100%	$0.01	2	2
Washington	Paper Mfg	Process Other	Mech Pulp: Premium Process			Per Industry	Existing	391	5	$44	18%	100%	$0.03	0.06	0.06
Washington	Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement			Per Industry	Existing	1,041	1	$37	28%	100%	$0.00	0.26	0.26
Washington	Paper Mfg	Process Other	Paper: Efficient Pulp Screen			Per Industry	Existing	35,008	10	$6,334	11%	100%	$0.03	3	3
Washington	Paper Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	27,783	10	$36,112	27%	100%	$0.02	56	56
Washington	Paper Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	55,022	3	$15,763	67%	100%	$0.02	158	158
Washington	Paper Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	21,853	10	$4,675	17%	100%	$0.03	3	3
Washington	Paper Mfg	Pumps	Facility Energy Management			Per Industry	Existing	25,734	2	$4,724	75%	100%	$0.01	155	155
Washington	Paper Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	81,937	15	$79,208	62%	100%	$0.05	103	103
Washington	Paper Mfg	Pumps	Motor rewinds			Per Industry	Existing	72,926	9	$17,435	4.4%	100%	$0.04	2	2
Washington	Paper Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	52,217	12	$6,527	28%	100%	$0.05	625	625
Washington	Paper Mfg	Pumps	Pump System Optimization			Per Industry	Existing	83,279	12	$81,266	75%	100%	$-0.02	1,024	1,024
Washington	Paper Mfg	Pumps	Synchronous Belts			Per Industry	Existing	37,238	10	$29,359	17%	100%	$0.03	21	21
Washington	Petroleum Refining	Fans	Facility Energy Management			Per Industry	Existing	19,686	2	$412	3.0%	100%	$0.01	0.54	0.54
Washington	Petroleum Refining	Fans	Fan System Optimization			Per Industry	Existing	82,217	10	$16,785	30%	100%	$0.03	22	22
Washington	Petroleum Refining	Fans	High Efficiency Motors			Per Industry	Existing	15,866	15	$6,907	76%	100%	$0.05	11	11
Washington	Petroleum Refining	Fans	Improved Controls - Fans			Per Industry	Existing	65,615	10	$5,929	34%	100%	$0.04	20	20
Washington	Petroleum Refining	Fans	Properly Sized Fans			Per Industry	Existing	11,432	10	$17,727	15%	100%	$0.02	15	15
Washington	Petroleum Refining	Fans	Synchronous Belts			Per Industry	Existing	11,968	10	$2,560	21%	100%	$0.03	2	2
Washington	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	10,907	15	$1,603	14%	100%	$0.02	1	1
Washington	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	34,813	15	$3,265	5.0%	100%	$0.01	1	1
Washington	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	78,177	20	$10,499	1.0%	100%	$0.01	0.71	0.71
Washington	Petroleum Refining	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	26,059	20	$3,499	6.5%	100%	$0.01	1	1
Washington	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	58,132	20	$7,807	2.5%	100%	$0.01	1	1
Washington	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	8,105	15	$1,172	45%	100%	$0.02	3	3
Washington	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	20,713	15	$2,357	20%	100%	$0.01	3	3

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Petroleum Refining	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	71,509	15	$171	2.5%	100%	$0.00	3	3
Washington	Petroleum Refining	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	72,736	30	$6,823	4.0%	100%	$0.01	2	2
Washington	Petroleum Refining	Hvac	Improved Controls - HVAC			Per Industry	Existing	64,898	10	$3,266	33%	100%	$0.01	19	19
Washington	Petroleum Refining	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	15,535	10	$426	73%	100%	$0.00	10	10
Washington	Petroleum Refining	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	39,710	15	$79,226	0.0%	100%	$0.25	0.00	0.00
Washington	Petroleum Refining	Lighting	Facility Energy Management			Per Industry	Existing	4,389	2	$91	75%	100%	$0.01	3	3
Washington	Petroleum Refining	Lighting	Induction (High Bay)			Per Industry	Existing	13,378	20	$73,938	0.0%	100%	$3.44	0.00	0.00
Washington	Petroleum Refining	Lighting	LED (High Bay)			Per Industry	Existing	44,076	20	$14,612	2.1%	100%	$1.61	0.85	0.85
Washington	Petroleum Refining	Lighting	Lighting Controls			Per Industry	Existing	43,917	10	$5,627	28%	100%	$0.02	11	11
Washington	Petroleum Refining	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	49,547	15	$48,048	40%	100%	$0.33	18	18
Washington	Petroleum Refining	Lighting	Metal Halide (High Bay)			Per Industry	Existing	27,748	15	$57,860	0.0%	100%	$0.21	0.00	0.00
Washington	Petroleum Refining	Lighting	Screw Base CFL			Per Industry	Existing	91,177	4	$3,953	10%	100%	$-0.00	18	18
Washington	Petroleum Refining	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	67,300	1	$3,113	0.0%	100%	$0.00	0.00	0.00
Washington	Petroleum Refining	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	46,128	1	$2,733	0.0%	100%	$-0.01	0.00	0.00
Washington	Petroleum Refining	Lighting	Screw Base LED			Per Industry	Existing	92,752	12	$32,373	1.8%	100%	$0.02	3	3
Washington	Petroleum Refining	Lighting	T5 Linear Florescent			Per Industry	Existing	71,789	13	$68,375	11%	100%	$0.49	7	7
Washington	Petroleum Refining	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	58,038	13	$45,686	34%	100%	$0.10	18	18
Washington	Petroleum Refining	Lighting	T8 Linear Florescent			Per Industry	Existing	44,787	13	$42,207	0.0%	100%	$0.12	0.00	0.00
Washington	Petroleum Refining	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	60,041	13	$60,304	0.0%	100%	$0.13	0.00	0.00
Washington	Petroleum Refining	Motors Other	Facility Energy Management			Per Industry	Existing	56,041	2	$1,172	75%	100%	$0.01	38	38
Washington	Petroleum Refining	Motors Other	High Efficiency Motors			Per Industry	Existing	45,168	15	$19,664	76%	100%	$0.05	31	31
Washington	Petroleum Refining	Motors Other	Improved Controls - Motors			Per Industry	Existing	5,707	10	$10,949	34%	100%	$0.02	33	33
Washington	Petroleum Refining	Motors Other	Motors Other			Per Industry	Existing	24,151	15	$440	91%	100%	$0.00	20	20
Washington	Petroleum Refining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	16,848	10	$3,844	6.8%	100%	$0.03	1	1
Washington	Petroleum Refining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	31,341	11.2	$11,299	4.8%	100%	$0.05	1	1
Washington	Petroleum Refining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	16,660	8	$2,416	4.1%	100%	$0.02	0.62	0.62
Washington	Petroleum Refining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	16,966	8	$1,725	4.1%	100%	$0.02	0.63	0.63

Table C-2.3. Industrial Measure Details

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Washington	Petroleum Refining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	18,287	9	$5,577	7.2%	100%	$0.05	1	1
Washington	Petroleum Refining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	28,299	12	$48,840	11%	100%	$0.03	22	22
Washington	Petroleum Refining	Motors Other	Synchronous Belts			Per Industry	Existing	34,071	10	$7,288	21%	100%	$0.03	6	6
Washington	Petroleum Refining	Other	Bldg Improvements			Per Industry	Existing	22,390	15	$2,927	35%	100%	$0.02	7	7
Washington	Petroleum Refining	Other	Facility Energy Management			Per Industry	Existing	2,020	2	$42	75%	100%	$0.01	1	1
Washington	Petroleum Refining	Other	Transformers			Per Industry	Existing	1,756	30	$350	20%	100%	$0.02	0.32	0.32
Washington	Petroleum Refining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	96,559	10	$10,136	27%	100%	$0.03	48	48
Washington	Petroleum Refining	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	49,874	10	$9,813	18%	100%	$0.03	40	40
Washington	Petroleum Refining	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	71,079	10	$40,080	31%	100%	$-0.01	104	104
Washington	Petroleum Refining	Process Aircomp	Facility Energy Management			Per Industry	Existing	22,704	2	$475	41%	100%	$0.01	8	8
Washington	Petroleum Refining	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	13,533	15	$4,647	77%	100%	$0.04	9	9
Washington	Petroleum Refining	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	29,518	10	$7,384	3.3%	100%	$0.00	7	7
Washington	Petroleum Refining	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	22,691	10	$13,995	35%	100%	$0.09	7	7
Washington	Petroleum Refining	Process Aircomp	Outside Air Intake			Per Industry	Existing	17,634	10	$8,108	35%	100%	$0.07	5	5
Washington	Petroleum Refining	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	73,252	10	$22,937	18%	100%	$0.05	11	11
Washington	Petroleum Refining	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	20,529	10	$2,834	18%	100%	$0.02	3	3
Washington	Petroleum Refining	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	92,270	10	$21,394	18%	100%	$0.06	47	47
Washington	Petroleum Refining	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	22,691	10	$7,061	18%	100%	$0.05	3	3
Washington	Petroleum Refining	Process Cool	Equipment: Chillers			Per Industry	Existing	96,547	20	$25,340	8.0%	100%	$0.03	7	7
Washington	Petroleum Refining	Process Cool	Facility Energy Management			Per Industry	Existing	9,940	2	$208	75%	100%	$0.01	6	6
Washington	Petroleum Refining	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	32,396	10	$28,508	34%	100%	$0.13	10	10
Washington	Petroleum Refining	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	63,916	10	$8,260	33%	100%	$0.01	49	49
Washington	Petroleum Refining	Process Heat	Process Heat O&M			Per Industry	Existing	25,771	2	$3,875	63%	100%	$0.02	73	73
Washington	Petroleum Refining	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Petroleum Refining	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	61,010	10	$9,672	34%	100%	$0.02	19	19
Washington	Petroleum Refining	Process Refrig	Optimization of operating parameters			Per Industry	Existing	68,306	3	$4,222	85%	100%	$0.02	53	53
Washington	Petroleum Refining	Process Refrig	Synchronous Belts			Per Industry	Existing	5,853	10	$1,252	21%	100%	$0.03	1	1
Washington	Petroleum Refining	Pumps	Facility Energy Management			Per Industry	Existing	35,636	2	$745	75%	100%	$0.01	24	24
Washington	Petroleum Refining	Pumps	High Efficiency Motors			Per Industry	Existing	28,722	15	$12,504	79%	100%	$0.05	20	20
Washington	Petroleum Refining	Pumps	Motor rewinds			Per Industry	Existing	11,512	9	$2,752	5.5%	100%	$0.04	0.58	0.58

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Washington	Petroleum Refining	Pumps	Pump Equipment Upgrade			Per Industry	Existing	87,133	12	$48,391	35%	100%	$0.05	125	125
Washington	Petroleum Refining	Pumps	Pump System Optimization			Per Industry	Existing	34,166	12	$60,190	75%	100%	$-0.02	161	161
Washington	Petroleum Refining	Pumps	Synchronous Belts			Per Industry	Existing	21,665	10	$4,634	22%	100%	$0.03	4	4
Washington	Stone Clay Glass Products	Fans	Facility Energy Management			Per Industry	Existing	36,455	2	$763	25%	100%	$0.01	8	8
Washington	Stone Clay Glass Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	93,051	10	$59,404	23%	100%	$0.04	146	146
Washington	Stone Clay Glass Products	Fans	High Efficiency Motors			Per Industry	Existing	29,382	15	$12,792	76%	100%	$0.05	20	20
Washington	Stone Clay Glass Products	Fans	Improved Controls - Fans			Per Industry	Existing	21,507	10	$10,981	34%	100%	$0.04	38	38
Washington	Stone Clay Glass Products	Fans	Properly Sized Fans			Per Industry	Existing	6,353	10	$32,827	15%	100%	$0.02	29	29
Washington	Stone Clay Glass Products	Fans	Synchronous Belts			Per Industry	Existing	22,163	10	$4,741	21%	100%	$0.03	4	4
Washington	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	53,024	15	$7,796	14%	100%	$0.02	6	6
Washington	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	69,236	15	$15,875	5.0%	100%	$0.01	7	7
Washington	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	80,035	20	$51,040	1.0%	100%	$0.01	3	3
Washington	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	26,678	20	$17,013	6.5%	100%	$0.01	7	7
Washington	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	82,590	20	$37,953	2.5%	100%	$0.01	6	6
Washington	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	39,401	15	$5,697	45%	100%	$0.02	16	16
Washington	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	693	15	$11,462	20%	100%	$0.01	18	18
Washington	Stone Clay Glass Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	33,740	15	$833	2.5%	100%	$0.00	19	19
Washington	Stone Clay Glass Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	53,585	30	$33,168	4.0%	100%	$0.01	13	13
Washington	Stone Clay Glass Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	15,481	10	$15,879	33%	100%	$0.01	97	97
Washington	Stone Clay Glass Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	75,519	10	$2,071	74%	100%	$0.00	51	51

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Stone Clay Glass Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	95,386	15	$89,813	0.0%	100%	$0.25	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	Facility Energy Management			Per Industry	Existing	21,597	2	$452	75%	100%	$0.01	14	14
Washington	Stone Clay Glass Products	Lighting	Induction (High Bay)			Per Industry	Existing	65,827	20	$31,898	0.0%	100%	$3.44	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	LED (High Bay)			Per Industry	Existing	16,866	20	$16,077	2.1%	100%	$1.61	4	4
Washington	Stone Clay Glass Products	Lighting	Lighting Controls			Per Industry	Existing	16,086	10	$27,688	28%	100%	$0.02	56	56
Washington	Stone Clay Glass Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	43,788	15	$28,435	40%	100%	$0.33	90	90
Washington	Stone Clay Glass Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	36,527	15	$84,689	0.0%	100%	$0.21	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	Screw Base CFL			Per Industry	Existing	40,643	4	$19,452	10%	100%	$-0.00	90	90
Washington	Stone Clay Glass Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	23,160	1	$15,317	0.0%	100%	$0.00	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	26,964	1	$13,448	0.0%	100%	$-0.01	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	Screw Base LED			Per Industry	Existing	48,390	12	$59,285	1.8%	100%	$0.02	16	16
Washington	Stone Clay Glass Products	Lighting	T5 Linear Florescent			Per Industry	Existing	53,223	13	$20,475	11%	100%	$0.49	36	36
Washington	Stone Clay Glass Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	85,564	13	$24,788	34%	100%	$0.10	89	89
Washington	Stone Clay Glass Products	Lighting	T8 Linear Florescent			Per Industry	Existing	20,366	13	$7,669	0.0%	100%	$0.12	0.00	0.00
Washington	Stone Clay Glass Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	95,419	13	$96,713	0.0%	100%	$0.13	0.00	0.00
Washington	Stone Clay Glass Products	Motors Other	Facility Energy Management			Per Industry	Existing	3,779	2	$2,172	75%	100%	$0.01	71	71
Washington	Stone Clay Glass Products	Motors Other	High Efficiency Motors			Per Industry	Existing	83,643	15	$36,415	75%	100%	$0.05	57	57
Washington	Stone Clay Glass Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	95,750	10	$20,276	34%	100%	$0.02	60	60
Washington	Stone Clay Glass Products	Motors Other	Motors Other			Per Industry	Existing	44,724	15	$815	90%	100%	$0.00	37	37
Washington	Stone Clay Glass Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	31,200	10	$7,120	6.7%	100%	$0.03	1	1
Washington	Stone Clay Glass Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	58,038	11.2	$20,924	4.7%	100%	$0.05	2	2

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Stone Clay Glass Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	30,851	8	$4,475	4.0%	100%	$0.02	1	1
Washington	Stone Clay Glass Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	31,419	8	$3,195	4.0%	100%	$0.02	1	1
Washington	Stone Clay Glass Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	33,865	9	$10,328	7.1%	100%	$0.05	2	2
Washington	Stone Clay Glass Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	22,768	12	$90,443	10%	100%	$0.03	40	40
Washington	Stone Clay Glass Products	Motors Other	Synchronous Belts			Per Industry	Existing	63,093	10	$13,497	21%	100%	$0.03	12	12
Washington	Stone Clay Glass Products	Other	Bldg Improvements			Per Industry	Existing	19,872	15	$28,751	35%	100%	$0.02	70	70
Washington	Stone Clay Glass Products	Other	Facility Energy Management			Per Industry	Existing	19,842	2	$415	75%	100%	$0.01	13	13
Washington	Stone Clay Glass Products	Other	Transformers			Per Industry	Existing	17,244	30	$3,443	20%	100%	$0.02	3	3
Washington	Stone Clay Glass Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	63,992	10	$18,771	26%	100%	$0.03	87	87
Washington	Stone Clay Glass Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	62,722	10	$18,173	17%	100%	$0.03	72	72
Washington	Stone Clay Glass Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	87,170	10	$74,222	30%	100%	$-0.01	187	187
Washington	Stone Clay Glass Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	42,043	2	$879	42%	100%	$0.01	16	16
Washington	Stone Clay Glass Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	25,060	15	$8,607	75%	100%	$0.04	17	17
Washington	Stone Clay Glass Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	25,025	10	$13,675	3.2%	100%	$0.00	12	12
Washington	Stone Clay Glass Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	42,019	10	$25,917	36%	100%	$0.09	13	13
Washington	Stone Clay Glass Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	32,656	10	$15,015	36%	100%	$0.07	10	10
Washington	Stone Clay Glass Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	35,650	10	$42,475	17%	100%	$0.05	21	21
Washington	Stone Clay Glass Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	38,017	10	$5,248	17%	100%	$0.02	5	5
Washington	Stone Clay Glass Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	41,230	10	$24,799	17%	100%	$0.06	84	84
Washington	Stone Clay Glass Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	42,019	10	$13,076	17%	100%	$0.05	6	6
Washington	Stone Clay Glass Products	Process Cool	Equipment: Chillers			Per Industry	Existing	50,480	20	$39,495	8.0%	100%	$0.03	11	11

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Stone Clay Glass Products	Process Cool	Facility Energy Management			Per Industry	Existing	15,493	2	$324	75%	100%	$0.01	10	10
Washington	Stone Clay Glass Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	50,492	10	$44,433	34%	100%	$0.13	15	15
Washington	Stone Clay Glass Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	14,503	10	$71,283	36%	100%	$0.01	471	471
Washington	Stone Clay Glass Products	Process Heat	Process Heat O&M			Per Industry	Existing	85,335	2	$33,443	70%	100%	$0.02	697	697
Washington	Stone Clay Glass Products	Process Other	Facility Energy Management			Per Industry	Existing	2,711	2	$56	75%	100%	$0.01	1	1
Washington	Stone Clay Glass Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	12,980	10	$17,911	34%	100%	$0.02	35	35
Washington	Stone Clay Glass Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	26,491	3	$7,818	85%	100%	$0.02	98	98
Washington	Stone Clay Glass Products	Process Refrig	Synchronous Belts			Per Industry	Existing	10,839	10	$2,318	21%	100%	$0.03	2	2
Washington	Stone Clay Glass Products	Pumps	Facility Energy Management			Per Industry	Existing	65,992	2	$1,381	75%	100%	$0.01	45	45
Washington	Stone Clay Glass Products	Pumps	High Efficiency Motors			Per Industry	Existing	53,188	15	$23,156	76%	100%	$0.05	36	36
Washington	Stone Clay Glass Products	Pumps	Motor rewinds			Per Industry	Existing	21,319	9	$5,097	5.3%	100%	$0.04	1	1
Washington	Stone Clay Glass Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	16,899	12	$89,612	34%	100%	$0.05	223	223
Washington	Stone Clay Glass Products	Pumps	Synchronous Belts			Per Industry	Existing	40,121	10	$8,583	21%	100%	$0.03	7	7
Washington	Transportation Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	9,365	2	$196	5.3%	100%	$0.01	0.45	0.45
Washington	Transportation Equipment Mfg	Fans	Fan System Optimization			Per Industry	Existing	39,112	10	$7,985	30%	100%	$0.03	10	10
Washington	Transportation Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	7,548	15	$3,286	76%	100%	$0.05	5	5
Washington	Transportation Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	31,214	10	$2,820	34%	100%	$0.04	9	9
Washington	Transportation Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	53,010	10	$8,433	15%	100%	$0.02	7	7
Washington	Transportation Equipment Mfg	Fans	Synchronous Belts			Per Industry	Existing	5,693	10	$1,218	21%	100%	$0.03	1	1
Washington	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	65,937	15	$9,695	14%	100%	$0.02	8	8
Washington	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	10,450	15	$19,741	5.0%	100%	$0.01	9	9

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	72,586	20	$63,471	1.0%	100%	$0.01	4	4
Washington	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	57,528	20	$21,157	6.5%	100%	$0.01	9	9
Washington	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	51,410	20	$47,196	2.5%	100%	$0.01	8	8
Washington	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	48,997	15	$7,085	45%	100%	$0.02	20	20
Washington	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	25,215	15	$14,253	20%	100%	$0.01	23	23
Washington	Transportation Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	36,780	15	$1,036	2.5%	100%	$0.00	23	23
Washington	Transportation Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	39,694	30	$41,246	4.0%	100%	$0.01	16	16
Washington	Transportation Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	92,311	10	$19,746	33%	100%	$0.01	120	120
Washington	Transportation Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	93,911	10	$2,575	74%	100%	$0.00	64	64
Washington	Transportation Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	44,918	15	$88,634	0.0%	100%	$0.25	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	27,072	2	$566	75%	100%	$0.01	18	18
Washington	Transportation Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	82,515	20	$23,058	0.0%	100%	$3.44	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	71,844	20	$7,438	2.1%	100%	$1.61	5	5
Washington	Transportation Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	70,866	10	$34,708	28%	100%	$0.02	70	70
Washington	Transportation Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	5,591	15	$13,101	40%	100%	$0.33	112	112
Washington	Transportation Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	71,138	15	$56,861	0.0%	100%	$0.21	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	79,106	4	$24,383	10%	100%	$-0.00	113	113
Washington	Transportation Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	31,840	1	$19,201	0.0%	100%	$0.00	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	84,502	1	$16,858	0.0%	100%	$-0.01	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	88,817	12	$99,666	1.8%	100%	$0.02	20	20

Table C-2.3. Industrial Measure Details

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Washington	Transportation Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	42,769	13	$55,229	11%	100%	$0.49	46	46
Washington	Transportation Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	57,957	13	$81,774	34%	100%	$0.10	111	111
Washington	Transportation Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	76,231	13	$60,316	0.0%	100%	$0.12	0.00	0.00
Washington	Transportation Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	70,310	13	$71,933	0.0%	100%	$0.13	0.00	0.00
Washington	Transportation Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	21,012	2	$439	75%	100%	$0.01	14	14
Washington	Transportation Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	16,935	15	$7,373	75%	100%	$0.05	11	11
Washington	Transportation Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	39,634	10	$4,105	34%	100%	$0.02	12	12
Washington	Transportation Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	9,055	15	$165	90%	100%	$0.00	7	7
Washington	Transportation Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	6,317	10	$1,441	6.7%	100%	$0.03	0.39	0.39
Washington	Transportation Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	11,751	11.2	$4,236	4.7%	100%	$0.05	0.50	0.50
Washington	Transportation Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	6,246	8	$906	4.0%	100%	$0.02	0.22	0.22
Washington	Transportation Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	6,361	8	$647	4.0%	100%	$0.02	0.23	0.23
Washington	Transportation Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	6,856	9	$2,091	7.1%	100%	$0.05	0.44	0.44
Washington	Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	85,600	12	$18,312	10%	100%	$0.03	8	8
Washington	Transportation Equipment Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	12,774	10	$2,732	21%	100%	$0.03	2	2
Washington	Transportation Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	83,222	15	$10,882	35%	100%	$0.02	26	26
Washington	Transportation Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	7,510	2	$157	75%	100%	$0.01	5	5
Washington	Transportation Equipment Mfg	Other	Transformers			Per Industry	Existing	6,527	30	$1,303	20%	100%	$0.02	1	1
Washington	Transportation Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	88,730	10	$9,733	26%	100%	$0.03	45	45
Washington	Transportation Equipment Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	39,921	10	$9,422	17%	100%	$0.03	37	37
Washington	Transportation Equipment Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	56,297	10	$38,484	30%	100%	$-0.01	97	97

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Washington	Transportation Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	21,799	2	$456	42%	100%	$0.01	8	8
Washington	Transportation Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	12,993	15	$4,462	75%	100%	$0.04	8	8
Washington	Transportation Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	20,375	10	$7,090	3.2%	100%	$0.00	6	6
Washington	Transportation Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	21,787	10	$13,438	36%	100%	$0.09	7	7
Washington	Transportation Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	16,932	10	$7,785	36%	100%	$0.07	5	5
Washington	Transportation Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	70,334	10	$22,023	17%	100%	$0.05	11	11
Washington	Transportation Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	19,712	10	$2,721	17%	100%	$0.02	3	3
Washington	Transportation Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	80,627	10	$16,558	17%	100%	$0.06	43	43
Washington	Transportation Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	21,787	10	$6,780	17%	100%	$0.05	3	3
Washington	Transportation Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	79,390	20	$20,837	8.0%	100%	$0.03	5	5
Washington	Transportation Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	8,174	2	$171	75%	100%	$0.01	5	5
Washington	Transportation Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	26,639	10	$23,442	34%	100%	$0.13	8	8
Washington	Transportation Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	71,221	10	$13,668	36%	100%	$0.01	90	90
Washington	Transportation Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	8,105	2	$6,412	70%	100%	$0.02	133	133
Washington	Transportation Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	2,363	2	$49	75%	100%	$0.01	1	1
Washington	Transportation Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	38,401	10	$6,088	34%	100%	$0.02	12	12
Washington	Transportation Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	42,993	3	$2,657	85%	100%	$0.02	33	33
Washington	Transportation Equipment Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	3,684	10	$788	21%	100%	$0.03	0.71	0.71
Washington	Transportation Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	20,461	2	$428	75%	100%	$0.01	14	14
Washington	Transportation Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	16,491	15	$7,179	76%	100%	$0.05	11	11
Washington	Transportation Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	6,610	9	$1,580	5.3%	100%	$0.04	0.32	0.32

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Washington	Transportation Equipment Mfg	Pumps	Synchronous Belts			Per Industry	Existing	12,440	10	$2,661	21%	100%	$0.03	2	2
Washington	Wastewater	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	3.0%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00
Washington	Wastewater	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
Washington	Wastewater	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Washington	Wastewater	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	15,293	15	$30,512	0.0%	100%	$0.25	0.00	0.00
Washington	Wastewater	Lighting	Facility Energy Management			Per Industry	Existing	1,690	2	$35	75%	100%	$0.01	1	1
Washington	Wastewater	Lighting	Induction (High Bay)			Per Industry	Existing	5,152	20	$82,529	0.0%	100%	$3.44	0.00	0.00
Washington	Wastewater	Lighting	LED (High Bay)			Per Industry	Existing	16,975	20	$75,221	2.1%	100%	$1.61	0.33	0.33
Washington	Wastewater	Lighting	Lighting Controls			Per Industry	Existing	16,914	10	$2,167	28%	100%	$0.02	4	4
Washington	Wastewater	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	19,082	15	$57,018	40%	100%	$0.33	7	7

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Wastewater	Lighting	Metal Halide (High Bay)			Per Industry	Existing	10,686	15	$22,284	0.0%	100%	$0.21	0.00	0.00
Washington	Wastewater	Lighting	Screw Base CFL			Per Industry	Existing	73,628	4	$1,522	10%	100%	$-0.00	7	7
Washington	Wastewater	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	64,433	1	$1,199	0.0%	100%	$0.00	0.00	0.00
Washington	Wastewater	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	17,765	1	$1,052	0.0%	100%	$-0.01	0.00	0.00
Washington	Wastewater	Lighting	Screw Base LED			Per Industry	Existing	74,235	12	$12,468	1.8%	100%	$0.02	1	1
Washington	Wastewater	Lighting	T5 Linear Florescent			Per Industry	Existing	27,648	13	$3,360	11%	100%	$0.49	2	2
Washington	Wastewater	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	22,352	13	$17,595	34%	100%	$0.10	6	6
Washington	Wastewater	Lighting	T8 Linear Florescent			Per Industry	Existing	17,249	13	$16,255	0.0%	100%	$0.12	0.00	0.00
Washington	Wastewater	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	23,123	13	$23,225	0.0%	100%	$0.13	0.00	0.00
Washington	Wastewater	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	11%	100%	.	0.00	0.00
Washington	Wastewater	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Washington	Wastewater	Other	Bldg Improvements			Per Industry	Existing	40,985	15	$18,435	35%	100%	$0.02	45	45
Washington	Wastewater	Other	Facility Energy Management			Per Industry	Existing	12,723	2	$266	75%	100%	$0.01	8	8
Washington	Wastewater	Other	Transformers			Per Industry	Existing	11,057	30	$2,207	20%	100%	$0.02	2	2
Washington	Wastewater	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	9,937	10	$26,298	26%	100%	$0.03	121	121
Washington	Wastewater	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	48,253	10	$25,460	17%	100%	$0.03	101	101
Washington	Wastewater	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	62,694	10	$3,982	30%	100%	$-0.01	262	262
Washington	Wastewater	Process Aircomp	Facility Energy Management			Per Industry	Existing	58,901	2	$1,232	66%	100%	$0.01	35	35
Washington	Wastewater	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	35,109	15	$12,058	75%	100%	$0.04	24	24
Washington	Wastewater	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	95,442	10	$19,158	8.8%	100%	$0.00	48	48
Washington	Wastewater	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Wastewater	Pumps	Facility Energy Management			Per Industry	Existing	15,659	2	$327	75%	100%	$0.01	10	10

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Wastewater	Pumps	High Efficiency Motors			Per Industry	Existing	12,621	15	$5,494	75%	100%	$0.05	8	8
Washington	Wastewater	Pumps	Motor rewinds			Per Industry	Existing	5,059	9	$1,209	5.3%	100%	$0.04	0.24	0.24
Washington	Wastewater	Pumps	Pump Equipment Upgrade			Per Industry	Existing	70,115	12	$21,264	34%	100%	$0.05	52	52
Washington	Wastewater	Pumps	Pump System Optimization			Per Industry	Existing	2,897	12	$26,449	75%	100%	$-0.02	71	71
Washington	Wastewater	Pumps	Synchronous Belts			Per Industry	Existing	9,520	10	$2,036	21%	100%	$0.03	1	1
Washington	Water	Fans	Efficient Centrifugal Fan			Per Industry	Existing	74,138	10	$4,388	11%	100%	$0.03	55	55
Washington	Water	Fans	Facility Energy Management			Per Industry	Existing	52,851	2	$1,106	3.0%	100%	$0.01	1	1
Washington	Water	Fans	Fan Equipment Upgrade			Per Industry	Existing	4,742	10	$86,120	23%	100%	$0.04	212	212
Washington	Water	Fans	Fan System Optimization			Per Industry	Existing	20,724	10	$45,062	30%	100%	$0.03	60	60
Washington	Water	Fans	High Efficiency Motors			Per Industry	Existing	42,597	15	$18,545	75%	100%	$0.05	29	29
Washington	Water	Fans	Improved Controls - Fans			Per Industry	Existing	76,153	10	$15,919	34%	100%	$0.04	54	54
Washington	Water	Fans	Properly Sized Fans			Per Industry	Existing	99,157	10	$47,591	15%	100%	$0.02	41	41
Washington	Water	Fans	Synchronous Belts			Per Industry	Existing	32,131	10	$6,873	21%	100%	$0.03	6	6
Washington	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Washington	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Washington	Water	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Washington	Water	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Washington	Water	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Washington	Water	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Washington	Water	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Washington	Water	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Washington	Water	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Washington	Water	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Washington	Water	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Washington	Water	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	91,763	15	$83,076	0.0%	100%	$0.25	0.00	0.00
Washington	Water	Lighting	Facility Energy Management			Per Industry	Existing	10,143	2	$212	75%	100%	$0.01	7	7
Washington	Water	Lighting	Induction (High Bay)			Per Industry	Existing	30,916	20	$95,178	0.0%	100%	$3.44	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Water	Lighting	LED (High Bay)			Per Industry	Existing	1,851	20	$51,328	2.1%	100%	$1.61	1	1
Washington	Water	Lighting	Lighting Controls			Per Industry	Existing	1,485	10	$13,004	28%	100%	$0.02	26	26
Washington	Water	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	14,495	15	$42,110	40%	100%	$0.33	42	42
Washington	Water	Lighting	Metal Halide (High Bay)			Per Industry	Existing	64,120	15	$33,704	0.0%	100%	$0.21	0.00	0.00
Washington	Water	Lighting	Screw Base CFL			Per Industry	Existing	41,773	4	$9,135	10%	100%	$-0.00	42	42
Washington	Water	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	86,598	1	$7,194	0.0%	100%	$0.00	0.00	0.00
Washington	Water	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	6,593	1	$6,316	0.0%	100%	$-0.01	0.00	0.00
Washington	Water	Lighting	Screw Base LED			Per Industry	Existing	45,412	12	$74,808	1.8%	100%	$0.02	7	7
Washington	Water	Lighting	T5 Linear Florescent			Per Industry	Existing	65,891	13	$20,162	11%	100%	$0.49	17	17
Washington	Water	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	34,115	13	$5,572	34%	100%	$0.10	41	41
Washington	Water	Lighting	T8 Linear Florescent			Per Industry	Existing	3,495	13	$97,532	0.0%	100%	$0.12	0.00	0.00
Washington	Water	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	38,743	13	$39,351	0.0%	100%	$0.13	0.00	0.00
Washington	Water	Motors Other	Facility Energy Management			Per Industry	Existing	52,851	2	$1,106	75%	100%	$0.01	36	36
Washington	Water	Motors Other	High Efficiency Motors			Per Industry	Existing	42,597	15	$18,545	75%	100%	$0.05	29	29
Washington	Water	Motors Other	Improved Controls - Motors			Per Industry	Existing	99,689	10	$10,326	34%	100%	$0.02	30	30
Washington	Water	Motors Other	Motors Other			Per Industry	Existing	22,776	15	$415	90%	100%	$0.00	18	18
Washington	Water	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	15,889	10	$3,626	6.7%	100%	$0.03	0.98	0.98
Washington	Water	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	29,557	11.2	$10,656	4.7%	100%	$0.05	1	1
Washington	Water	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	15,711	8	$2,279	4.0%	100%	$0.02	0.57	0.57
Washington	Water	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	16,000	8	$1,627	4.0%	100%	$0.02	0.58	0.58
Washington	Water	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	17,246	9	$5,260	7.1%	100%	$0.05	1	1
Washington	Water	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	15,301	12	$46,059	11%	100%	$0.03	20	20
Washington	Water	Motors Other	Synchronous Belts			Per Industry	Existing	32,131	10	$6,873	21%	100%	$0.03	6	6
Washington	Water	Other	Bldg Improvements			Per Industry	Existing	45,915	15	$10,615	35%	100%	$0.02	272	272
Washington	Water	Other	Facility Energy Management			Per Industry	Existing	76,340	2	$1,597	75%	100%	$0.01	52	52
Washington	Water	Other	Transformers			Per Industry	Existing	66,344	30	$13,247	20%	100%	$0.02	12	12
Washington	Water	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Water	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Water	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Water	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Washington	Water	Pumps	Facility Energy Management			Per Industry	Existing	41,664	2	$7,151	60%	100%	$0.01	187	187
Washington	Water	Pumps	High Efficiency Motors			Per Industry	Existing	75,374	15	$19,887	75%	100%	$0.05	190	190
Washington	Water	Pumps	Motor rewinds			Per Industry	Existing	10,378	9	$26,390	5.3%	100%	$0.04	5	5
Washington	Water	Pumps	Pump Equipment Upgrade			Per Industry	Existing	11,601	12	$63,950	34%	100%	$0.05	1,146	1,146

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Water	Pumps	Pump System Optimization			Per Industry	Existing	45,046	12	$77,072	15%	100%	$-0.02	318	318
Washington	Water	Pumps	Synchronous Belts			Per Industry	Existing	7,719	10	$44,437	21%	100%	$0.03	40	40
Wyoming	Agriculture	Fans	Circulating Fans			Per Industry	Existing	11,261	10	$61,439	32%	100%	$0.21	961	961
Wyoming	Agriculture	Fans	High-efficiency Ventilation Systems			Per Industry	Existing	83,207	10	$9,512	32%	100%	$0.29	1,089	1,089
Wyoming	Agriculture	Fans	Programmable Ventilation Controllers			Per Industry	Existing	56,225	10	$6,339	32%	100%	$0.02	19	19
Wyoming	Agriculture	Motors Other	VFDs - Potato / Onion Shed			Per Industry	Existing	49,000	10	$52,089	0.1%	100%	$0.05	22	22
Wyoming	Agriculture	Other	Agricultural Engine Block Heater Timers			Per Industry	Existing	30,795	10	$63,311	18%	100%	$0.01	199	199
Wyoming	Agriculture	Process Cool	Milk Precoolers			Per Industry	Existing	7,414	15	$18,542	0.4%	100%	$0.06	2	2
Wyoming	Agriculture	Process Heat	Heat Lamp Setback (Microzone)			Per Industry	Existing	53,013	15	$43,012	1.4%	100%	$0.02	3	3
Wyoming	Agriculture	Process Heat	Heat Lamp/Heating Pad Controller			Per Industry	Existing	83,941	15	$2,866	1.4%	100%	$0.01	14	14
Wyoming	Agriculture	Process Heat	Heat Lamps			Per Industry	Existing	97,601	10	$35,843	1.4%	100%	$0.00	28	28
Wyoming	Agriculture	Process Heat	Heat Reclaimers			Per Industry	Existing	3,616	15	$73,401	0.4%	100%	$0.08	26	26
Wyoming	Agriculture	Process Heat	High-efficiency Livestock Waterers			Per Industry	Existing	25,337	10	$54,344	32%	100%	$0.06	2,164	2,164
Wyoming	Agriculture	Pumps	Automatic Milker Takeoffs			Per Industry	Existing	24,504	15	$91,479	0.4%	100%	$0.07	5	5
Wyoming	Agriculture	Pumps	VFDs for Dairy Vacuum Pumps			Per Industry	Existing	27,482	15	$76,185	0.4%	100%	$0.02	98	98
Wyoming	Chemical Mfg	Fans	Facility Energy Management			Per Industry	Existing	27,714	2	$19,417	27%	100%	$0.01	271	271
Wyoming	Chemical Mfg	Fans	High Efficiency Motors			Per Industry	Existing	47,718	15	$25,527	73%	100%	$0.05	587	587
Wyoming	Chemical Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	92,080	10	$79,444	33%	100%	$0.01	1,092	1,092
Wyoming	Chemical Mfg	Fans	Properly Sized Fans			Per Industry	Existing	51,207	10	$35,396	15%	100%	$0.02	824	824
Wyoming	Chemical Mfg	Fans	Synchronous Belts			Per Industry	Existing	64,015	10	$20,660	21%	100%	$0.03	124	124
Wyoming	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	1,830	15	$20,835	14%	100%	$0.02	217	217
Wyoming	Chemical Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	93,327	15	$49,645	5.0%	100%	$0.01	256	256
Wyoming	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	63,858	20	$45,647	1.0%	100%	$0.01	115	115
Wyoming	Chemical Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	87,952	20	$81,882	6.5%	100%	$0.01	249	249
Wyoming	Chemical Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	3,894	20	$74,969	2.5%	100%	$0.01	214	214
Wyoming	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	15,985	15	$61,374	45%	100%	$0.02	538	538
Wyoming	Chemical Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	51,962	15	$24,645	20%	100%	$0.01	611	611
Wyoming	Chemical Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	14,249	15	$23,614	2.5%	100%	$0.00	632	632

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Chemical Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	14,700	30	$39,444	4.0%	100%	$0.01	429	429
Wyoming	Chemical Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	35,475	10	$49,762	33%	100%	$0.01	3,127	3,127
Wyoming	Chemical Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	38,971	10	$58,659	73%	100%	$0.00	1,663	1,663
Wyoming	Chemical Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	55,221	15	$84,625	0.0%	100%	$0.24	0.00	0.00
Wyoming	Chemical Mfg	Lighting	Facility Energy Management			Per Industry	Existing	80,891	2	$12,158	75%	100%	$0.01	466	466
Wyoming	Chemical Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	70,544	20	$20,013	0.0%	100%	$3.75	0.00	0.00
Wyoming	Chemical Mfg	Lighting	LED (High Bay)			Per Industry	Existing	32,954	20	$70,320	2.1%	100%	$1.72	132	132
Wyoming	Chemical Mfg	Lighting	Lighting Controls			Per Industry	Existing	11,970	10	$44,733	28%	100%	$0.02	1,756	1,756
Wyoming	Chemical Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	57,064	15	$92,404	40%	100%	$0.36	2,819	2,819
Wyoming	Chemical Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	72,113	15	$57,164	0.0%	100%	$0.25	0.00	0.00
Wyoming	Chemical Mfg	Lighting	Screw Base CFL			Per Industry	Existing	53	4	$23,205	10%	100%	$0.01	2,837	2,837
Wyoming	Chemical Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	40,183	1	$11,996	0.0%	100%	$0.00	0.00	0.00
Wyoming	Chemical Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	4,555	1	$61,729	0.0%	100%	$0.00	0.00	0.00
Wyoming	Chemical Mfg	Lighting	Screw Base LED			Per Industry	Existing	8,426	12	$84,241	1.8%	100%	$0.02	504	504
Wyoming	Chemical Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	491	13	$16,232	11%	100%	$0.49	1,151	1,151
Wyoming	Chemical Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	80,695	13	$46,033	34%	100%	$0.10	2,792	2,792
Wyoming	Chemical Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	27,085	13	$85,599	0.0%	100%	$0.12	0.00	0.00
Wyoming	Chemical Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	45,749	13	$80,570	0.0%	100%	$0.13	0.00	0.00
Wyoming	Chemical Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	81,510	2	$43,566	75%	100%	$0.01	1,672	1,672
Wyoming	Chemical Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	77,655	15	$30,385	74%	100%	$0.05	1,330	1,330
Wyoming	Chemical Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	26,197	10	$6,685	33%	100%	$0.02	1,400	1,400
Wyoming	Chemical Mfg	Motors Other	Motors Other			Per Industry	Existing	97,046	15	$16,358	89%	100%	$0.00	853	853
Wyoming	Chemical Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	25,785	10	$42,808	6.7%	100%	$0.03	44	44
Wyoming	Chemical Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	64,083	11.2	$19,694	4.6%	100%	$0.05	58	58
Wyoming	Chemical Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	18,799	8	$89,767	3.9%	100%	$0.03	26	26
Wyoming	Chemical Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	30,183	8	$64,095	3.9%	100%	$0.02	26	26
Wyoming	Chemical Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	79,250	9	$7,165	7.0%	100%	$0.05	50	50
Wyoming	Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	79,518	12	$14,026	10%	100%	$0.03	941	941
Wyoming	Chemical Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	65,480	10	$70,724	21%	100%	$0.03	280	280
Wyoming	Chemical Mfg	Other	Bldg Improvements			Per Industry	Existing	92,257	15	$38,973	35%	100%	$0.02	972	972
Wyoming	Chemical Mfg	Other	Facility Energy Management			Per Industry	Existing	33,941	2	$4,896	75%	100%	$0.01	187	187
Wyoming	Chemical Mfg	Other	Transformers			Per Industry	Existing	3,309	30	$40,594	20%	100%	$0.02	43	43

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Chemical Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	95,520	10	$64,151	28%	100%	$0.01	5,599	5,599
Wyoming	Chemical Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	59,469	2	$45,197	16%	100%	$0.01	371	371
Wyoming	Chemical Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	87,180	15	$42,079	81%	100%	$0.04	1,114	1,114
Wyoming	Chemical Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	30,309	10	$2,410	59%	100%	$0.00	13,783	13,783
Wyoming	Chemical Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	58,222	10	$31,175	38%	100%	$0.09	886	886
Wyoming	Chemical Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	77,314	10	$71,244	38%	100%	$0.07	689	689
Wyoming	Chemical Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	67,305	10	$81,635	18%	100%	$0.05	1,367	1,367
Wyoming	Chemical Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	52,676	10	$69,564	18%	100%	$0.02	383	383
Wyoming	Chemical Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	98,847	10	$46,217	18%	100%	$0.06	5,455	5,455
Wyoming	Chemical Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	58,222	10	$71,650	18%	100%	$0.05	423	423
Wyoming	Chemical Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	113	1	$61,525	10%	100%	$0.00	2,667	2,667
Wyoming	Chemical Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	27,256	10	$51,412	28%	100%	$0.01	2,802	2,802
Wyoming	Chemical Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	2,525	20	$7,041	30%	100%	$0.02	1,800	1,800
Wyoming	Chemical Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	31,196	20	$21,548	8.0%	100%	$0.03	954	954
Wyoming	Chemical Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	46,066	2	$23,987	75%	100%	$0.01	920	920
Wyoming	Chemical Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	35,017	10	$86,815	34%	100%	$0.13	1,350	1,350
Wyoming	Chemical Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	18,141	10	$53,678	33%	100%	$0.01	2,476	2,476
Wyoming	Chemical Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	84,952	2	$65,933	63%	100%	$0.02	3,659	3,659
Wyoming	Chemical Mfg	Process Other	Facility Energy Management			Per Industry	Existing	17,780	2	$372	75%	100%	$0.01	14	14
Wyoming	Chemical Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	4,021	10	$3,076	34%	100%	$0.02	1,385	1,385
Wyoming	Chemical Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	58,907	3	$63,251	85%	100%	$0.02	3,878	3,878
Wyoming	Chemical Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	64,951	10	$78,074	21%	100%	$0.03	82	82
Wyoming	Chemical Mfg	Pumps	Facility Energy Management			Per Industry	Existing	26,939	2	$42,423	59%	100%	$0.01	1,289	1,289
Wyoming	Chemical Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	33,671	15	$11,237	76%	100%	$0.05	1,330	1,330
Wyoming	Chemical Mfg	Pumps	Motor rewinds			Per Industry	Existing	54,826	9	$56,560	5.4%	100%	$0.04	37	37
Wyoming	Chemical Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	19,224	12	$52,403	34%	100%	$0.02	8,026	8,026
Wyoming	Chemical Mfg	Pumps	Pump System Optimization			Per Industry	Existing	18,825	12	$23,506	16%	100%	$0.04	2,232	2,232
Wyoming	Chemical Mfg	Pumps	Synchronous Belts			Per Industry	Existing	32,303	10	$63,627	21%	100%	$0.03	281	281
Wyoming	Electronic Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	71,734	2	$3,594	27%	100%	$0.01	50	50
Wyoming	Electronic Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	38,414	15	$60,260	74%	100%	$0.05	109	109

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Electronic Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	72,393	10	$51,729	33%	100%	$0.01	203	203
Wyoming	Electronic Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	72,082	10	$54,645	15%	100%	$0.02	153	153
Wyoming	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	12,389	15	$92,979	14%	100%	$0.02	189	189
Wyoming	Electronic Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	88,697	15	$92,927	5.0%	100%	$0.01	224	224
Wyoming	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	6,105	20	$63,294	1.0%	100%	$0.01	100	100
Wyoming	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	35,368	20	$21,098	6.5%	100%	$0.01	218	218
Wyoming	Electronic Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	94,283	20	$39,372	2.5%	100%	$0.01	187	187
Wyoming	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	75,214	15	$41,018	45%	100%	$0.02	470	470
Wyoming	Electronic Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	92,216	15	$83,694	20%	100%	$0.01	534	534
Wyoming	Electronic Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	35,549	15	$20,635	2.5%	100%	$0.00	552	552
Wyoming	Electronic Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	51,447	30	$20,942	4.0%	100%	$0.01	375	375
Wyoming	Electronic Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	8,355	10	$93,029	39%	100%	$0.01	3,253	3,253
Wyoming	Electronic Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	69,162	10	$51,260	86%	100%	$0.00	1,730	1,730
Wyoming	Electronic Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	16,384	15	$9,598	0.0%	100%	$0.24	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	21,330	2	$10,911	75%	100%	$0.01	418	418
Wyoming	Electronic Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	89,003	20	$89,099	0.0%	100%	$3.75	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	34,880	20	$73,677	2.1%	100%	$1.72	118	118
Wyoming	Electronic Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	16,047	10	$68,373	28%	100%	$0.02	1,576	1,576
Wyoming	Electronic Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	84,744	15	$83,522	40%	100%	$0.36	2,530	2,530

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Wyoming	Electronic Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	95,597	15	$72,046	0.0%	100%	$0.25	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	5,946	4	$69,559	10%	100%	$0.01	2,546	2,546
Wyoming	Electronic Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	70,068	1	$69,752	0.0%	100%	$0.00	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	78,633	1	$24,640	0.0%	100%	$0.00	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	92,954	12	$44,962	1.8%	100%	$0.02	453	453
Wyoming	Electronic Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	26,371	13	$74,622	11%	100%	$0.49	1,033	1,033
Wyoming	Electronic Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	93,165	13	$26,111	34%	100%	$0.10	2,506	2,506
Wyoming	Electronic Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	19,359	13	$12,887	0.0%	100%	$0.12	0.00	0.00
Wyoming	Electronic Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	31,042	13	$62,293	0.0%	100%	$0.13	0.00	0.00
Wyoming	Electronic Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	85,320	2	$8,064	75%	100%	$0.01	309	309
Wyoming	Electronic Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	10,560	15	$35,206	75%	100%	$0.05	248	248
Wyoming	Electronic Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	26,802	10	$75,283	34%	100%	$0.02	262	262
Wyoming	Electronic Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	66,057	15	$3,028	90%	100%	$0.00	159	159
Wyoming	Electronic Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	15,842	10	$26,436	6.7%	100%	$0.03	8	8
Wyoming	Electronic Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	15,490	11.2	$77,692	4.7%	100%	$0.05	10	10
Wyoming	Electronic Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	14,549	8	$16,617	4.0%	100%	$0.03	4	4
Wyoming	Electronic Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	16,657	8	$11,865	4.0%	100%	$0.02	4	4
Wyoming	Electronic Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	25,740	9	$38,349	7.0%	100%	$0.05	9	9
Wyoming	Electronic Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	69,694	12	$35,805	10%	100%	$0.03	176	176
Wyoming	Electronic Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	87,702	15	$42,988	35%	100%	$0.02	1,270	1,270
Wyoming	Electronic Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	5,727	2	$6,398	75%	100%	$0.01	245	245

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Wyoming	Electronic Equipment Mfg	Other	Transformers			Per Industry	Existing	65,696	30	$53,051	20%	100%	$0.02	56	56
Wyoming	Electronic Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	60,840	10	$78,479	26%	100%	$0.01	946	946
Wyoming	Electronic Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	99,752	2	$8,366	72%	100%	$0.01	307	307
Wyoming	Electronic Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	38,277	15	$81,835	74%	100%	$0.04	188	188
Wyoming	Electronic Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	41,140	10	$30,027	3.2%	100%	$0.00	136	136
Wyoming	Electronic Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	99,521	10	$46,421	35%	100%	$0.09	149	149
Wyoming	Electronic Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	10,497	10	$42,769	35%	100%	$0.07	116	116
Wyoming	Electronic Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	89,759	10	$3,855	17%	100%	$0.05	231	231
Wyoming	Electronic Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	61,471	10	$49,900	17%	100%	$0.02	64	64
Wyoming	Electronic Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	46,012	10	$37,389	17%	100%	$0.06	921	921
Wyoming	Electronic Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	99,521	10	$24,333	17%	100%	$0.05	71	71
Wyoming	Electronic Equipment Mfg	Process Cool	Clean Room: Change Filter Strategy			Per Industry	Existing	65,820	1	$25,077	10%	100%	$0.00	414	414
Wyoming	Electronic Equipment Mfg	Process Cool	Clean Room: Chiller Optimize			Per Industry	Existing	32,560	10	$16,659	28%	100%	$0.01	435	435
Wyoming	Electronic Equipment Mfg	Process Cool	Clean Room: Clean Room HVAC			Per Industry	Existing	69,809	20	$40,820	30%	100%	$0.02	279	279
Wyoming	Electronic Equipment Mfg	Process Cool	Elec Chip Fab: Solidstate Chiller			Per Industry	Existing	98,096	10	$23,190	20%	100%	$0.08	1,863	1,863
Wyoming	Electronic Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	28,153	20	$53,579	8.0%	100%	$0.03	148	148
Wyoming	Electronic Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	77,930	2	$3,724	75%	100%	$0.01	142	142
Wyoming	Electronic Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	79,873	10	$10,288	34%	100%	$0.13	209	209
Wyoming	Electronic Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	48,402	10	$92,058	36%	100%	$0.01	4,541	4,541
Wyoming	Electronic Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	14,436	2	$77,773	69%	100%	$0.02	6,710	6,710
Wyoming	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust			Per Industry	Existing	66,109	10	$12,343	80%	100%	$0.03	56	56

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Wyoming	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector			Per Industry	Existing	22,186	10	$95,404	35%	100%	$0.07	496	496
Wyoming	Electronic Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure			Per Industry	Existing	32,218	10	$0.00	50%	100%	$0.00	70	70
Wyoming	Electronic Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	24,342	2	$509	75%	100%	$0.01	19	19
Wyoming	Electronic Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	4,185	10	$11,639	34%	100%	$0.02	256	256
Wyoming	Electronic Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	88,391	3	$48,732	85%	100%	$0.02	718	718
Wyoming	Electronic Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	75,218	2	$7,853	75%	100%	$0.01	301	301
Wyoming	Electronic Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	2,418	15	$31,661	73%	100%	$0.05	236	236
Wyoming	Electronic Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	21,218	9	$28,981	5.2%	100%	$0.04	6	6
Wyoming	Food Mfg	Fans	Facility Energy Management			Per Industry	Existing	76,802	2	$5,793	3.7%	100%	$0.01	11	11
Wyoming	Food Mfg	Fans	Fan System Optimization			Per Industry	Existing	56,020	10	$36,010	30%	100%	$0.03	367	367
Wyoming	Food Mfg	Fans	High Efficiency Motors			Per Industry	Existing	23,097	15	$97,127	75%	100%	$0.05	179	179
Wyoming	Food Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	22,585	10	$83,378	34%	100%	$0.01	334	334
Wyoming	Food Mfg	Fans	Properly Sized Fans			Per Industry	Existing	66,805	10	$49,257	15%	100%	$0.02	252	252
Wyoming	Food Mfg	Fans	Synchronous Belts			Per Industry	Existing	68,285	10	$36,001	21%	100%	$0.03	37	37
Wyoming	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	71,751	15	$42,890	14%	100%	$0.02	140	140
Wyoming	Food Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	1,496	15	$90,940	5.0%	100%	$0.01	166	166
Wyoming	Food Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	64,696	20	$35,398	1.0%	100%	$0.01	74	74
Wyoming	Food Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	21,565	20	$11,799	6.5%	100%	$0.01	161	161
Wyoming	Food Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	78,877	20	$95,552	2.5%	100%	$0.01	138	138
Wyoming	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	22,092	15	$4,416	45%	100%	$0.02	348	348
Wyoming	Food Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	45,347	15	$10,060	20%	100%	$0.01	395	395
Wyoming	Food Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	79,473	15	$15,279	2.5%	100%	$0.00	409	409

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Food Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	79,958	30	$7,862	4.0%	100%	$0.01	277	277
Wyoming	Food Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	81,651	10	$91,016	33%	100%	$0.01	2,023	2,023
Wyoming	Food Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	84,010	10	$37,955	73%	100%	$0.00	1,076	1,076
Wyoming	Food Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	17,223	15	$12,745	0.0%	100%	$0.24	0.00	0.00
Wyoming	Food Mfg	Lighting	Facility Energy Management			Per Industry	Existing	88,262	2	$10,219	75%	100%	$0.01	392	392
Wyoming	Food Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	88,212	20	$18,673	0.0%	100%	$3.75	0.00	0.00
Wyoming	Food Mfg	Lighting	LED (High Bay)			Per Industry	Existing	2,830	20	$90,127	2.1%	100%	$1.72	110	110
Wyoming	Food Mfg	Lighting	Lighting Controls			Per Industry	Existing	85,192	10	$25,978	28%	100%	$0.02	1,476	1,476
Wyoming	Food Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	11,473	15	$68,197	40%	100%	$0.36	2,369	2,369
Wyoming	Food Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	86,557	15	$36,151	0.0%	100%	$0.25	0.00	0.00
Wyoming	Food Mfg	Lighting	Screw Base CFL			Per Industry	Existing	65,704	4	$39,774	10%	100%	$0.01	2,384	2,384
Wyoming	Food Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	9,707	1	$46,299	0.0%	100%	$0.00	0.00	0.00
Wyoming	Food Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	31,122	1	$4,048	0.0%	100%	$0.00	0.00	0.00
Wyoming	Food Mfg	Lighting	Screw Base LED			Per Industry	Existing	40,850	12	$1,075	1.8%	100%	$0.02	424	424
Wyoming	Food Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	85,542	13	$52,810	11%	100%	$0.49	967	967
Wyoming	Food Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	55,930	13	$81,932	34%	100%	$0.10	2,347	2,347
Wyoming	Food Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	81,951	13	$94,919	0.0%	100%	$0.12	0.00	0.00
Wyoming	Food Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	78,719	13	$7,987	0.0%	100%	$0.13	0.00	0.00
Wyoming	Food Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	39,373	2	$30,126	75%	100%	$0.01	1,156	1,156
Wyoming	Food Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	60,105	15	$5,064	73%	100%	$0.05	908	908
Wyoming	Food Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	14,982	10	$81,224	33%	100%	$0.02	956	956
Wyoming	Food Mfg	Motors Other	Motors Other			Per Industry	Existing	20,311	15	$11,312	88%	100%	$0.00	582	582
Wyoming	Food Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	32,733	10	$98,752	6.6%	100%	$0.03	30	30
Wyoming	Food Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	4,969	11.2	$90,220	4.6%	100%	$0.05	39	39
Wyoming	Food Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	27,902	8	$62,074	3.9%	100%	$0.03	17	17
Wyoming	Food Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	35,775	8	$44,322	3.9%	100%	$0.02	18	18
Wyoming	Food Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	69,704	9	$43,255	6.9%	100%	$0.05	34	34
Wyoming	Food Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	63,624	12	$54,407	10%	100%	$0.03	642	642
Wyoming	Food Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	75,085	10	$87,207	20%	100%	$0.03	191	191
Wyoming	Food Mfg	Other	Bldg Improvements			Per Industry	Existing	78,946	15	$68,752	35%	100%	$0.02	2,204	2,204
Wyoming	Food Mfg	Other	Facility Energy Management			Per Industry	Existing	30,552	2	$11,104	75%	100%	$0.01	426	426
Wyoming	Food Mfg	Other	Transformers			Per Industry	Existing	61,083	30	$92,064	20%	100%	$0.02	98	98

Table C-2.3. Industrial Measure Details

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Wyoming	Food Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	27,647	10	$22,838	17%	100%	$0.01	560	560
Wyoming	Food Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	44,741	10	$1,687	29%	100%	$0.02	1,448	1,448
Wyoming	Food Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	84,184	2	$5,947	43%	100%	$0.01	130	130
Wyoming	Food Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	69,391	15	$58,177	74%	100%	$0.04	133	133
Wyoming	Food Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	72,846	10	$92,436	3.2%	100%	$0.00	97	97
Wyoming	Food Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	84,019	10	$75,181	35%	100%	$0.09	106	106
Wyoming	Food Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	20,732	10	$1,494	35%	100%	$0.07	82	82
Wyoming	Food Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	16,890	10	$87,100	17%	100%	$0.05	164	164
Wyoming	Food Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	56,970	10	$35,474	17%	100%	$0.02	46	46
Wyoming	Food Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	58,300	10	$19,470	17%	100%	$0.06	655	655
Wyoming	Food Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	84,019	10	$88,388	17%	100%	$0.05	50	50
Wyoming	Food Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	78,293	20	$92,424	8.3%	100%	$0.03	1,596	1,596
Wyoming	Food Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	40,747	2	$38,526	75%	100%	$0.01	1,479	1,479
Wyoming	Food Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	98,971	10	$79,094	35%	100%	$0.13	2,259	2,259
Wyoming	Food Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	20,472	10	$77,413	34%	100%	$0.01	1,272	1,272
Wyoming	Food Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	1,224	2	$83,236	65%	100%	$0.02	1,880	1,880
Wyoming	Food Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Food Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	76,084	10	$90,110	34%	100%	$0.02	2,504	2,504
Wyoming	Food Mfg	Process Refrig	Cold Storage Retrofit			Per Industry	Existing	33,666	10	$35,140	39%	100%	$0.03	4,067	4,067
Wyoming	Food Mfg	Process Refrig	Cold Storage Tuneup			Per Industry	Existing	1,250	3	$99,714	66%	100%	$0.02	6,506	6,506
Wyoming	Food Mfg	Process Refrig	Food: Cooling and Storage			Per Industry	Existing	40,541	10	$52,162	15%	100%	$0.05	1,420	1,420
Wyoming	Food Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	98,327	3	$75,848	3.0%	100%	$0.02	247	247
Wyoming	Food Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	59,679	10	$41,125	21%	100%	$0.03	148	148
Wyoming	Food Mfg	Pumps	Facility Energy Management			Per Industry	Existing	5,275	2	$12,668	60%	100%	$0.01	388	388
Wyoming	Food Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	87,839	15	$12,386	74%	100%	$0.05	385	385
Wyoming	Food Mfg	Pumps	Motor rewinds			Per Industry	Existing	95,541	9	$46,751	5.2%	100%	$0.04	10	10
Wyoming	Food Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	75,278	12	$21,909	33%	100%	$0.02	2,324	2,324
Wyoming	Food Mfg	Pumps	Pump System Optimization			Per Industry	Existing	77,205	12	$22,311	15%	100%	$0.04	646	646
Wyoming	Food Mfg	Pumps	Synchronous Belts			Per Industry	Existing	67,984	10	$78,723	21%	100%	$0.03	81	81
Wyoming	Industrial Machinery	Fans	Facility Energy Management			Per Industry	Existing	92,560	2	$18,681	6.6%	100%	$0.01	63	63
Wyoming	Industrial Machinery	Fans	Fan Equipment Upgrade			Per Industry	Existing	68,246	10	$54,421	23%	100%	$0.01	4,181	4,181

Table C-2.3. Industrial Measure Details

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Wyoming	Industrial Machinery	Fans	Fan System Optimization			Per Industry	Existing	27,632	10	$61,025	30%	100%	$0.03	1,203	1,203
Wyoming	Industrial Machinery	Fans	High Efficiency Motors			Per Industry	Existing	19,385	15	$13,192	76%	100%	$0.05	588	588
Wyoming	Industrial Machinery	Fans	Improved Controls - Fans			Per Industry	Existing	74,911	10	$68,855	34%	100%	$0.01	1,095	1,095
Wyoming	Industrial Machinery	Fans	Properly Sized Fans			Per Industry	Existing	52,222	10	$3,740	15%	100%	$0.02	826	826
Wyoming	Industrial Machinery	Fans	Synchronous Belts			Per Industry	Existing	42,643	10	$16,087	21%	100%	$0.03	124	124
Wyoming	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	21,093	15	$94,210	14%	100%	$0.02	682	682
Wyoming	Industrial Machinery	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	68,110	15	$13,487	5.0%	100%	$0.01	807	807
Wyoming	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	36,829	20	$44,480	1.0%	100%	$0.01	362	362
Wyoming	Industrial Machinery	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	78,943	20	$14,826	6.5%	100%	$0.01	785	785
Wyoming	Industrial Machinery	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	60,719	20	$79,229	2.5%	100%	$0.01	673	673
Wyoming	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	8,166	15	$7,290	45%	100%	$0.02	1,691	1,691
Wyoming	Industrial Machinery	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	65,313	15	$20,541	20%	100%	$0.01	1,921	1,921
Wyoming	Industrial Machinery	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	32,798	15	$74,232	2.5%	100%	$0.00	1,988	1,988
Wyoming	Industrial Machinery	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	81,808	30	$53,199	4.0%	100%	$0.01	1,349	1,349
Wyoming	Industrial Machinery	Hvac	Improved Controls - HVAC			Per Industry	Existing	89,200	10	$13,855	33%	100%	$0.01	10,058	10,058
Wyoming	Industrial Machinery	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	23,985	10	$84,400	74%	100%	$0.00	5,350	5,350
Wyoming	Industrial Machinery	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	63,596	15	$45,326	0.0%	100%	$0.24	0.00	0.00
Wyoming	Industrial Machinery	Lighting	Facility Energy Management			Per Industry	Existing	41,928	2	$38,551	75%	100%	$0.01	1,480	1,480
Wyoming	Industrial Machinery	Lighting	Induction (High Bay)			Per Industry	Existing	14,155	20	$76,666	0.0%	100%	$3.75	0.00	0.00
Wyoming	Industrial Machinery	Lighting	LED (High Bay)			Per Industry	Existing	95,508	20	$69,676	2.1%	100%	$1.72	418	418
Wyoming	Industrial Machinery	Lighting	Lighting Controls			Per Industry	Existing	28,970	10	$61,448	28%	100%	$0.02	5,569	5,569
Wyoming	Industrial Machinery	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	91,561	15	$24,859	40%	100%	$0.36	8,940	8,940
Wyoming	Industrial Machinery	Lighting	Metal Halide (High Bay)			Per Industry	Existing	43,773	15	$79,829	0.0%	100%	$0.25	0.00	0.00
Wyoming	Industrial Machinery	Lighting	Screw Base CFL			Per Industry	Existing	23,043	4	$59,012	10%	100%	$0.01	8,995	8,995

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Wyoming	Industrial Machinery	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	3,521	1	$6,384	0.0%	100%	$0.00	0.00	0.00
Wyoming	Industrial Machinery	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	56,718	1	$46,996	0.0%	100%	$0.00	0.00	0.00
Wyoming	Industrial Machinery	Lighting	Screw Base LED			Per Industry	Existing	83,766	12	$84,749	1.8%	100%	$0.02	1,600	1,600
Wyoming	Industrial Machinery	Lighting	T5 Linear Florescent			Per Industry	Existing	24,771	13	$17,161	11%	100%	$0.49	3,651	3,651
Wyoming	Industrial Machinery	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	54,443	13	$71,154	34%	100%	$0.10	8,855	8,855
Wyoming	Industrial Machinery	Lighting	T8 Linear Florescent			Per Industry	Existing	93,983	13	$11,179	0.0%	100%	$0.12	0.00	0.00
Wyoming	Industrial Machinery	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	94,896	13	$5,308	0.0%	100%	$0.13	0.00	0.00
Wyoming	Industrial Machinery	Motors Other	Facility Energy Management			Per Industry	Existing	40,865	2	$53,180	75%	100%	$0.01	2,041	2,041
Wyoming	Industrial Machinery	Motors Other	High Efficiency Motors			Per Industry	Existing	47,885	15	$91,569	75%	100%	$0.05	1,643	1,643
Wyoming	Industrial Machinery	Motors Other	Improved Controls - Motors			Per Industry	Existing	92,643	10	$96,434	34%	100%	$0.02	1,731	1,731
Wyoming	Industrial Machinery	Motors Other	Motors Other			Per Industry	Existing	95,009	15	$19,969	90%	100%	$0.00	1,054	1,054
Wyoming	Industrial Machinery	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	63,885	10	$74,324	6.7%	100%	$0.03	55	55
Wyoming	Industrial Machinery	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	20,977	11.2	$12,313	4.7%	100%	$0.05	71	71
Wyoming	Industrial Machinery	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	55,358	8	$9,577	4.0%	100%	$0.03	32	32
Wyoming	Industrial Machinery	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	69,255	8	$78,240	4.0%	100%	$0.02	32	32
Wyoming	Industrial Machinery	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	29,149	9	$52,883	7.1%	100%	$0.05	62	62
Wyoming	Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	50,807	12	$14,351	10%	100%	$0.03	1,163	1,163
Wyoming	Industrial Machinery	Motors Other	Synchronous Belts			Per Industry	Existing	44,751	10	$30,469	21%	100%	$0.03	347	347
Wyoming	Industrial Machinery	Other	Bldg Improvements			Per Industry	Existing	91,415	15	$71,896	35%	100%	$0.02	3,934	3,934
Wyoming	Industrial Machinery	Other	Facility Energy Management			Per Industry	Existing	46,810	2	$19,816	75%	100%	$0.01	760	760
Wyoming	Industrial Machinery	Other	Transformers			Per Industry	Existing	22,838	30	$64,296	20%	100%	$0.02	176	176
Wyoming	Industrial Machinery	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	11,781	10	$59,591	26%	100%	$0.01	2,481	2,481
Wyoming	Industrial Machinery	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	29,016	10	$44,948	17%	100%	$0.01	2,066	2,066
Wyoming	Industrial Machinery	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	24,260	10	$17,221	30%	100%	$0.02	5,343	5,343
Wyoming	Industrial Machinery	Process Aircomp	Facility Energy Management			Per Industry	Existing	29,376	2	$21,544	42%	100%	$0.01	464	464
Wyoming	Industrial Machinery	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	13,573	15	$10,730	75%	100%	$0.04	493	493
Wyoming	Industrial Machinery	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	6,073	10	$34,825	3.2%	100%	$0.00	358	358
Wyoming	Industrial Machinery	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	28,781	10	$34,544	36%	100%	$0.09	392	392
Wyoming	Industrial Machinery	Process Aircomp	Outside Air Intake			Per Industry	Existing	99,542	10	$67,636	36%	100%	$0.07	305	305
Wyoming	Industrial Machinery	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	21,175	10	$39,942	17%	100%	$0.05	605	605

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Industrial Machinery	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	30,802	10	$28,495	17%	100%	$0.02	169	169
Wyoming	Industrial Machinery	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	51,156	10	$3,851	17%	100%	$0.06	2,417	2,417
Wyoming	Industrial Machinery	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	28,781	10	$20,162	17%	100%	$0.05	187	187
Wyoming	Industrial Machinery	Process Cool	Equipment: Chillers			Per Industry	Existing	59,718	20	$18,026	8.0%	100%	$0.03	365	365
Wyoming	Industrial Machinery	Process Cool	Facility Energy Management			Per Industry	Existing	38,580	2	$9,179	75%	100%	$0.01	352	352
Wyoming	Industrial Machinery	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	29,327	10	$57,807	34%	100%	$0.13	516	516
Wyoming	Industrial Machinery	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	78,950	10	$85,098	36%	100%	$0.01	6,047	6,047
Wyoming	Industrial Machinery	Process Heat	Process Heat O&M			Per Industry	Existing	53,580	2	$68,341	70%	100%	$0.02	8,937	8,937
Wyoming	Industrial Machinery	Process Other	Facility Energy Management			Per Industry	Existing	72,915	2	$1,526	75%	100%	$0.01	58	58
Wyoming	Industrial Machinery	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	66,156	10	$38,536	34%	100%	$0.02	1,007	1,007
Wyoming	Industrial Machinery	Process Refrig	Optimization of operating parameters			Per Industry	Existing	96,933	3	$91,427	85%	100%	$0.02	2,820	2,820
Wyoming	Industrial Machinery	Process Refrig	Synchronous Belts			Per Industry	Existing	65,380	10	$56,772	21%	100%	$0.03	59	59
Wyoming	Industrial Machinery	Pumps	Facility Energy Management			Per Industry	Existing	15,729	2	$33,817	75%	100%	$0.01	1,298	1,298
Wyoming	Industrial Machinery	Pumps	High Efficiency Motors			Per Industry	Existing	2,245	15	$66,946	76%	100%	$0.05	1,053	1,053
Wyoming	Industrial Machinery	Pumps	Motor rewinds			Per Industry	Existing	21,980	9	$24,798	5.3%	100%	$0.04	29	29
Wyoming	Industrial Machinery	Pumps	Synchronous Belts			Per Industry	Existing	82,303	10	$10,144	21%	100%	$0.03	222	222
Wyoming	Lumber Wood Products	Fans	Efficient Centrifugal Fan			Per Industry	Existing	42,960	10	$44,174	11%	100%	$0.03	659	659
Wyoming	Lumber Wood Products	Fans	Facility Energy Management			Per Industry	Existing	28,657	2	$11,064	3.0%	100%	$0.01	16	16
Wyoming	Lumber Wood Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	50,181	10	$61,444	23%	100%	$0.01	2,476	2,476
Wyoming	Lumber Wood Products	Fans	Fan System Optimization			Per Industry	Existing	7,852	10	$50,750	30%	100%	$0.03	714	714
Wyoming	Lumber Wood Products	Fans	High Efficiency Motors			Per Industry	Existing	26,087	15	$85,501	77%	100%	$0.05	349	349
Wyoming	Lumber Wood Products	Fans	Improved Controls - Fans			Per Industry	Existing	62,020	10	$59,241	34%	100%	$0.01	650	650
Wyoming	Lumber Wood Products	Fans	Properly Sized Fans			Per Industry	Existing	92,398	10	$76,050	15%	100%	$0.02	490	490
Wyoming	Lumber Wood Products	Fans	Synchronous Belts			Per Industry	Existing	21,404	10	$68,758	21%	100%	$0.03	73	73
Wyoming	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	90,672	15	$1,559	14%	100%	$0.02	99	99

Table C-2.3. Industrial Measure Details

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Wyoming	Lumber Wood Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	4,389	15	$6,786	5.0%	100%	$0.01	118	118
Wyoming	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	50,159	20	$64,834	1.0%	100%	$0.01	53	53
Wyoming	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	50,053	20	$21,611	6.5%	100%	$0.01	114	114
Wyoming	Lumber Wood Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	80,887	20	$94,364	2.5%	100%	$0.01	98	98
Wyoming	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	13,227	15	$74,214	45%	100%	$0.02	247	247
Wyoming	Lumber Wood Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	11,580	15	$49,300	20%	100%	$0.01	281	281
Wyoming	Lumber Wood Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	59,887	15	$10,859	2.5%	100%	$0.00	290	290
Wyoming	Lumber Wood Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	5,631	30	$32,038	4.0%	100%	$0.01	197	197
Wyoming	Lumber Wood Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	9,309	10	$6,839	33%	100%	$0.01	1,444	1,444
Wyoming	Lumber Wood Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	83,685	10	$26,976	73%	100%	$0.00	768	768
Wyoming	Lumber Wood Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	68,524	15	$20,007	0.0%	100%	$0.24	0.00	0.00
Wyoming	Lumber Wood Products	Lighting	Facility Energy Management			Per Industry	Existing	83,396	2	$8,024	75%	100%	$0.01	308	308
Wyoming	Lumber Wood Products	Lighting	Induction (High Bay)			Per Industry	Existing	68,585	20	$96,135	0.0%	100%	$3.75	0.00	0.00
Wyoming	Lumber Wood Products	Lighting	LED (High Bay)			Per Industry	Existing	49,836	20	$17,809	2.1%	100%	$1.72	87	87
Wyoming	Lumber Wood Products	Lighting	Lighting Controls			Per Industry	Existing	35,986	10	$91,535	28%	100%	$0.02	1,159	1,159
Wyoming	Lumber Wood Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	27,759	15	$31,276	40%	100%	$0.36	1,860	1,860
Wyoming	Lumber Wood Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	23,648	15	$53,841	0.0%	100%	$0.25	0.00	0.00
Wyoming	Lumber Wood Products	Lighting	Screw Base CFL			Per Industry	Existing	98,409	4	$45,323	10%	100%	$0.01	1,872	1,872
Wyoming	Lumber Wood Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	12,848	1	$71,923	0.0%	100%	$0.00	0.00	0.00
Wyoming	Lumber Wood Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	29,096	1	$38,746	0.0%	100%	$0.00	0.00	0.00

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Wyoming	Lumber Wood Products	Lighting	Screw Base LED			Per Industry	Existing	35,938	12	$27,662	1.8%	100%	$0.02	333	333
Wyoming	Lumber Wood Products	Lighting	T5 Linear Florescent			Per Industry	Existing	70,464	13	$41,238	11%	100%	$0.49	759	759
Wyoming	Lumber Wood Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	69,372	13	$90,471	34%	100%	$0.10	1,843	1,843
Wyoming	Lumber Wood Products	Lighting	T8 Linear Florescent			Per Industry	Existing	11,963	13	$86,578	0.0%	100%	$0.12	0.00	0.00
Wyoming	Lumber Wood Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	44,312	13	$67,294	0.0%	100%	$0.13	0.00	0.00
Wyoming	Lumber Wood Products	Motors Other	Facility Energy Management			Per Industry	Existing	4,937	2	$31,498	75%	100%	$0.01	1,209	1,209
Wyoming	Lumber Wood Products	Motors Other	High Efficiency Motors			Per Industry	Existing	12,949	15	$28,070	75%	100%	$0.05	977	977
Wyoming	Lumber Wood Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	38,651	10	$94,034	34%	100%	$0.02	1,029	1,029
Wyoming	Lumber Wood Products	Motors Other	Material Handling			Per Industry	Existing	94,958	10	$13,532	53%	100%	$0.07	2,333	2,333
Wyoming	Lumber Wood Products	Motors Other	Material Handling VFD			Per Industry	Existing	8,257	10	$92,477	53%	100%	$0.05	8,722	8,722
Wyoming	Lumber Wood Products	Motors Other	Motors Other			Per Industry	Existing	48,567	15	$11,827	90%	100%	$0.00	627	627
Wyoming	Lumber Wood Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	52,444	10	$3,250	6.8%	100%	$0.03	32	32
Wyoming	Lumber Wood Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	41,635	11.2	$3,440	4.7%	100%	$0.05	42	42
Wyoming	Lumber Wood Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	47,393	8	$64,901	4.0%	100%	$0.03	19	19
Wyoming	Lumber Wood Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	55,624	8	$46,341	4.0%	100%	$0.02	19	19
Wyoming	Lumber Wood Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	91,099	9	$49,781	7.1%	100%	$0.05	37	37
Wyoming	Lumber Wood Products	Motors Other	Panel: Hydraulic Press			Per Industry	Existing	88,004	10	$89,722	28%	100%	$0.03	6,866	6,866
Wyoming	Lumber Wood Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	30,715	12	$11,546	11%	100%	$0.03	692	692
Wyoming	Lumber Wood Products	Motors Other	Synchronous Belts			Per Industry	Existing	14,946	10	$95,734	21%	100%	$0.03	206	206
Wyoming	Lumber Wood Products	Motors Other	Wood: Replace Pneumatic Conveyor			Per Industry	Existing	5,432	10	$43,728	50%	100%	$0.00	12,742	12,742
Wyoming	Lumber Wood Products	Other	Bldg Improvements			Per Industry	Existing	23,513	15	$4,587	35%	100%	$0.02	1,733	1,733

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Wyoming	Lumber Wood Products	Other	Facility Energy Management			Per Industry	Existing	17,254	2	$8,733	75%	100%	$0.01	335	335
Wyoming	Lumber Wood Products	Other	Transformers			Per Industry	Existing	62,620	30	$72,404	20%	100%	$0.02	77	77
Wyoming	Lumber Wood Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	78,390	10	$72,213	27%	100%	$0.01	1,517	1,517
Wyoming	Lumber Wood Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	10,102	10	$63,540	18%	100%	$0.01	1,263	1,263
Wyoming	Lumber Wood Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	64,899	10	$76,328	31%	100%	$0.02	3,267	3,267
Wyoming	Lumber Wood Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	9,692	2	$12,760	41%	100%	$0.01	268	268
Wyoming	Lumber Wood Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	63,415	15	$24,814	78%	100%	$0.04	301	301
Wyoming	Lumber Wood Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	63,449	10	$98,314	3.3%	100%	$0.00	219	219
Wyoming	Lumber Wood Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	9,340	10	$75,836	37%	100%	$0.09	240	240
Wyoming	Lumber Wood Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	73,563	10	$17,748	37%	100%	$0.07	186	186
Wyoming	Lumber Wood Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	67,110	10	$15,950	18%	100%	$0.05	370	370
Wyoming	Lumber Wood Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	51,308	10	$76,107	18%	100%	$0.02	103	103
Wyoming	Lumber Wood Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	48,573	10	$59,895	18%	100%	$0.06	1,478	1,478
Wyoming	Lumber Wood Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	9,340	10	$89,630	18%	100%	$0.05	114	114
Wyoming	Lumber Wood Products	Process Cool	Equipment: Chillers			Per Industry	Existing	28,844	20	$86,310	7.7%	100%	$0.03	27	27
Wyoming	Lumber Wood Products	Process Cool	Facility Energy Management			Per Industry	Existing	33,857	2	$708	75%	100%	$0.01	27	27
Wyoming	Lumber Wood Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	10,342	10	$97,101	32%	100%	$0.13	38	38
Wyoming	Lumber Wood Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	84,278	10	$20,944	33%	100%	$0.01	1,547	1,547
Wyoming	Lumber Wood Products	Process Heat	Process Heat O&M			Per Industry	Existing	64,014	2	$3,659	63%	100%	$0.02	2,286	2,286
Wyoming	Lumber Wood Products	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Lumber Wood Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	38,376	10	$59,742	34%	100%	$0.02	596	596

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Wyoming	Lumber Wood Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	34,293	3	$13,381	85%	100%	$0.02	1,670	1,670
Wyoming	Lumber Wood Products	Process Refrig	Synchronous Belts			Per Industry	Existing	57,183	10	$33,626	21%	100%	$0.03	35	35
Wyoming	Lumber Wood Products	Pumps	Facility Energy Management			Per Industry	Existing	56,986	2	$20,029	75%	100%	$0.01	769	769
Wyoming	Lumber Wood Products	Pumps	High Efficiency Motors			Per Industry	Existing	71,311	15	$35,798	72%	100%	$0.05	596	596
Wyoming	Lumber Wood Products	Pumps	Motor rewinds			Per Industry	Existing	9,165	9	$73,917	5.1%	100%	$0.04	16	16
Wyoming	Lumber Wood Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	96,016	12	$99,502	32%	100%	$0.02	3,598	3,598
Wyoming	Lumber Wood Products	Pumps	Pump System Optimization			Per Industry	Existing	88,265	12	$16,352	75%	100%	$0.04	5,053	5,053
Wyoming	Lumber Wood Products	Pumps	Synchronous Belts			Per Industry	Existing	81,811	10	$24,467	20%	100%	$0.03	126	126
Wyoming	Metal Mfg	Fans	Facility Energy Management			Per Industry	Existing	93,704	2	$14,519	27%	100%	$0.01	202	202
Wyoming	Metal Mfg	Fans	High Efficiency Motors			Per Industry	Existing	59,111	15	$43,415	73%	100%	$0.05	440	440
Wyoming	Metal Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	12,123	10	$8,956	33%	100%	$0.01	819	819
Wyoming	Metal Mfg	Fans	Properly Sized Fans			Per Industry	Existing	26,624	10	$24,673	15%	100%	$0.02	618	618
Wyoming	Metal Mfg	Fans	Synchronous Belts			Per Industry	Existing	21,746	10	$90,224	21%	100%	$0.03	92	92
Wyoming	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	87,482	15	$45,203	14%	100%	$0.02	142	142
Wyoming	Metal Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	51,706	15	$95,650	5.0%	100%	$0.01	168	168
Wyoming	Metal Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	77,446	20	$50,541	1.0%	100%	$0.01	75	75
Wyoming	Metal Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	59,148	20	$16,847	6.5%	100%	$0.01	164	164
Wyoming	Metal Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	62,716	20	$6,813	2.5%	100%	$0.01	140	140
Wyoming	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	33,782	15	$6,106	45%	100%	$0.02	353	353
Wyoming	Metal Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	75,220	15	$13,460	20%	100%	$0.01	401	401
Wyoming	Metal Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	26,829	15	$15,526	2.5%	100%	$0.00	415	415
Wyoming	Metal Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	84,861	30	$17,702	4.0%	100%	$0.01	282	282

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Wyoming	Metal Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	75,249	10	$95,727	34%	100%	$0.01	2,114	2,114
Wyoming	Metal Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	6,415	10	$38,570	75%	100%	$0.00	1,125	1,125
Wyoming	Metal Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	53,077	15	$87,716	0.0%	100%	$0.24	0.00	0.00
Wyoming	Metal Mfg	Lighting	Facility Energy Management			Per Industry	Existing	14,850	2	$8,682	75%	100%	$0.01	333	333
Wyoming	Metal Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	64,454	20	$92,224	0.0%	100%	$3.75	0.00	0.00
Wyoming	Metal Mfg	Lighting	LED (High Bay)			Per Industry	Existing	65,672	20	$38,490	2.1%	100%	$1.72	94	94
Wyoming	Metal Mfg	Lighting	Lighting Controls			Per Industry	Existing	50,685	10	$31,859	28%	100%	$0.02	1,254	1,254
Wyoming	Metal Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	82,803	15	$92,142	40%	100%	$0.36	2,013	2,013
Wyoming	Metal Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	22,482	15	$68,452	0.0%	100%	$0.25	0.00	0.00
Wyoming	Metal Mfg	Lighting	Screw Base CFL			Per Industry	Existing	68,326	4	$73,653	10%	100%	$0.01	2,026	2,026
Wyoming	Metal Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	11,668	1	$94,231	0.0%	100%	$0.00	0.00	0.00
Wyoming	Metal Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	59,639	1	$58,333	0.0%	100%	$0.00	0.00	0.00
Wyoming	Metal Mfg	Lighting	Screw Base LED			Per Industry	Existing	17,138	12	$59,640	1.8%	100%	$0.02	360	360
Wyoming	Metal Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	84,886	13	$64,328	11%	100%	$0.49	822	822
Wyoming	Metal Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	85,257	13	$17,845	34%	100%	$0.10	1,994	1,994
Wyoming	Metal Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	32,896	13	$89,020	0.0%	100%	$0.12	0.00	0.00
Wyoming	Metal Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	74,549	13	$99,416	0.0%	100%	$0.13	0.00	0.00
Wyoming	Metal Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	92,954	2	$58,456	75%	100%	$0.01	2,244	2,244
Wyoming	Metal Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	51,064	15	$80,025	74%	100%	$0.05	1,787	1,787
Wyoming	Metal Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	68,140	10	$45,687	33%	100%	$0.02	1,882	1,882
Wyoming	Metal Mfg	Motors Other	Motors Other			Per Industry	Existing	3,649	15	$21,950	89%	100%	$0.00	1,147	1,147
Wyoming	Metal Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	39,674	10	$91,619	6.7%	100%	$0.03	59	59
Wyoming	Metal Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	61,958	11.2	$63,142	4.6%	100%	$0.05	78	78
Wyoming	Metal Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	30,300	8	$20,448	3.9%	100%	$0.03	35	35
Wyoming	Metal Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	45,575	8	$86,002	3.9%	100%	$0.02	35	35
Wyoming	Metal Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	11,412	9	$77,973	7.0%	100%	$0.05	68	68
Wyoming	Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	77,750	12	$34,046	10%	100%	$0.03	1,265	1,265
Wyoming	Metal Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	98,012	10	$63,256	21%	100%	$0.03	377	377
Wyoming	Metal Mfg	Other	Bldg Improvements			Per Industry	Existing	57,478	15	$69,043	35%	100%	$0.02	771	771
Wyoming	Metal Mfg	Other	Facility Energy Management			Per Industry	Existing	85,679	2	$3,886	75%	100%	$0.01	149	149
Wyoming	Metal Mfg	Other	Transformers			Per Industry	Existing	61,367	30	$32,220	20%	100%	$0.02	34	34
Wyoming	Metal Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	13,188	10	$89,479	25%	100%	$0.01	1,520	1,520
Wyoming	Metal Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	35,711	10	$80,255	17%	100%	$0.01	1,266	1,266

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Metal Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	96,953	10	$44,598	29%	100%	$0.02	3,273	3,273
Wyoming	Metal Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	48,364	2	$13,570	43%	100%	$0.01	299	299
Wyoming	Metal Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	86,466	15	$32,730	73%	100%	$0.04	302	302
Wyoming	Metal Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	54,384	10	$10,893	3.1%	100%	$0.00	219	219
Wyoming	Metal Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	47,989	10	$99,675	35%	100%	$0.09	240	240
Wyoming	Metal Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	3,600	10	$31,560	35%	100%	$0.07	187	187
Wyoming	Metal Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	91,880	10	$55,019	17%	100%	$0.05	371	371
Wyoming	Metal Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	86,276	10	$80,934	17%	100%	$0.02	104	104
Wyoming	Metal Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	46,392	10	$66,664	17%	100%	$0.06	1,481	1,481
Wyoming	Metal Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	47,989	10	$1,657	17%	100%	$0.05	114	114
Wyoming	Metal Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	21,560	20	$94,370	8.0%	100%	$0.03	96	96
Wyoming	Metal Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	15,475	2	$2,416	75%	100%	$0.01	92	92
Wyoming	Metal Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	76,333	10	$31,173	34%	100%	$0.13	136	136
Wyoming	Metal Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	43,788	10	$16,607	35%	100%	$0.01	23,104	23,104
Wyoming	Metal Mfg	Process Heat	Metal: New Arc Furnace			Per Industry	Existing	31,148	10	$40,183	7.3%	100%	$0.01	7,598	7,598
Wyoming	Metal Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	52,148	2	$62,206	67%	100%	$0.02	34,142	34,142
Wyoming	Metal Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Metal Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Wyoming	Metal Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	85%	100%	.	0.00	0.00
Wyoming	Metal Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Wyoming	Metal Mfg	Pumps	Facility Energy Management			Per Industry	Existing	94,459	2	$8,256	75%	100%	$0.01	316	316
Wyoming	Metal Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	17,926	15	$38,412	72%	100%	$0.05	245	245
Wyoming	Metal Mfg	Pumps	Motor rewinds			Per Industry	Existing	27,434	9	$30,468	5.1%	100%	$0.04	6	6
Wyoming	Metal Mfg	Pumps	Synchronous Belts			Per Industry	Existing	39,816	10	$51,304	20%	100%	$0.03	51	51
Wyoming	Mining	Motors Other	High Efficiency Motors			Per Industry	Existing	63,520	15	$43,050	25%	100%	$0.05	5,133	5,133
Wyoming	Mining	Motors Other	Improved Controls - Motors			Per Industry	Existing	48,173	10	$45,486	0.0%	100%	$0.02	0.00	0.00
Wyoming	Mining	Motors Other	Material Handling			Per Industry	Existing	96,710	10	$32,107	25%	100%	$0.07	17,330	17,330
Wyoming	Mining	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Mining	Motors Other	Motors Other			Per Industry	Existing	46,782	15	$86,864	25%	100%	$0.00	2,744	2,744
Wyoming	Mining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	48,223	10	$31,273	6.7%	100%	$0.03	516	516
Wyoming	Mining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	97,098	11.2	$94,084	4.7%	100%	$0.05	673	673

Table C-2.3. Industrial Measure Details

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Wyoming	Mining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	68,426	8	$25,391	4.0%	100%	$0.03	302	302
Wyoming	Mining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	98,466	8	$32,147	4.0%	100%	$0.02	308	308
Wyoming	Mining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	58,943	9	$66,412	7.1%	100%	$0.05	587	587
Wyoming	Mining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	59,854	12	$21,262	0.0%	100%	$0.03	0.00	0.00
Wyoming	Mining	Motors Other	Synchronous Belts			Per Industry	Existing	55,335	10	$92,434	0.0%	100%	$0.03	0.00	0.00
Wyoming	Mining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	18%	100%	.	0.00	0.00
Wyoming	Miscellaneous Mfg	Fans	Facility Energy Management			Per Industry	Existing	58,315	2	$11,685	5.5%	100%	$0.01	33	33
Wyoming	Miscellaneous Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	14,002	10	$9,771	23%	100%	$0.01	2,615	2,615
Wyoming	Miscellaneous Mfg	Fans	Fan System Optimization			Per Industry	Existing	31,713	10	$76,037	30%	100%	$0.03	753	753
Wyoming	Miscellaneous Mfg	Fans	High Efficiency Motors			Per Industry	Existing	49,991	15	$95,908	76%	100%	$0.05	368	368
Wyoming	Miscellaneous Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	60,871	10	$68,175	34%	100%	$0.01	685	685
Wyoming	Miscellaneous Mfg	Fans	Properly Sized Fans			Per Industry	Existing	60,273	10	$2,756	15%	100%	$0.02	517	517
Wyoming	Miscellaneous Mfg	Fans	Synchronous Belts			Per Industry	Existing	39,435	10	$72,615	21%	100%	$0.03	77	77
Wyoming	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	91,103	15	$72,165	14%	100%	$0.02	562	562
Wyoming	Miscellaneous Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	19,065	15	$64,989	5.0%	100%	$0.01	665	665
Wyoming	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	88,154	20	$45,539	1.0%	100%	$0.01	298	298
Wyoming	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	96,051	20	$48,513	6.5%	100%	$0.01	647	647
Wyoming	Miscellaneous Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	37,345	20	$85,144	2.5%	100%	$0.01	555	555
Wyoming	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	91,414	15	$18,106	45%	100%	$0.02	1,394	1,394
Wyoming	Miscellaneous Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	89,169	15	$41,125	20%	100%	$0.01	1,583	1,583
Wyoming	Miscellaneous Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	82,320	15	$61,182	2.5%	100%	$0.00	1,638	1,638
Wyoming	Miscellaneous Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	47,157	30	$34,012	4.0%	100%	$0.01	1,112	1,112
Wyoming	Miscellaneous Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	50,985	10	$65,292	33%	100%	$0.01	8,289	8,289
Wyoming	Miscellaneous Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	41,876	10	$51,982	74%	100%	$0.00	4,409	4,409

Table C-2.3. Industrial Measure Details

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Wyoming	Miscellaneous Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	31,592	15	$98,180	0.0%	100%	$0.24	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	Facility Energy Management			Per Industry	Existing	62,568	2	$30,611	75%	100%	$0.01	1,175	1,175
Wyoming	Miscellaneous Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	57,874	20	$16,393	0.0%	100%	$3.75	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	LED (High Bay)			Per Industry	Existing	86,207	20	$9,068	2.1%	100%	$1.72	332	332
Wyoming	Miscellaneous Mfg	Lighting	Lighting Controls			Per Industry	Existing	33,373	10	$75,089	28%	100%	$0.02	4,422	4,422
Wyoming	Miscellaneous Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	9,370	15	$29,737	40%	100%	$0.36	7,098	7,098
Wyoming	Miscellaneous Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	45,643	15	$79,200	0.0%	100%	$0.25	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	Screw Base CFL			Per Industry	Existing	453	4	$17,325	10%	100%	$0.01	7,143	7,143
Wyoming	Miscellaneous Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	44,533	1	$37,324	0.0%	100%	$0.00	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	70,044	1	$10,762	0.0%	100%	$0.00	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	Screw Base LED			Per Industry	Existing	25,094	12	$86,859	1.8%	100%	$0.02	1,270	1,270
Wyoming	Miscellaneous Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	20,328	13	$22,737	11%	100%	$0.49	2,899	2,899
Wyoming	Miscellaneous Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	38,447	13	$22,698	34%	100%	$0.10	7,031	7,031
Wyoming	Miscellaneous Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	23,209	13	$63,417	0.0%	100%	$0.12	0.00	0.00
Wyoming	Miscellaneous Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	5,802	13	$93,473	0.0%	100%	$0.13	0.00	0.00
Wyoming	Miscellaneous Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	47,859	2	$47,047	75%	100%	$0.01	1,806	1,806
Wyoming	Miscellaneous Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	11,728	15	$88,756	75%	100%	$0.05	1,454	1,454
Wyoming	Miscellaneous Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	39,968	10	$39,186	34%	100%	$0.02	1,531	1,531
Wyoming	Miscellaneous Mfg	Motors Other	Motors Other			Per Industry	Existing	68,735	15	$17,666	90%	100%	$0.00	933	933
Wyoming	Miscellaneous Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	75,796	10	$54,221	6.7%	100%	$0.03	48	48
Wyoming	Miscellaneous Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	57,114	11.2	$53,235	4.7%	100%	$0.05	63	63
Wyoming	Miscellaneous Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	68,252	8	$96,941	4.0%	100%	$0.03	28	28
Wyoming	Miscellaneous Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	80,546	8	$69,217	4.0%	100%	$0.02	29	29
Wyoming	Miscellaneous Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	33,534	9	$23,721	7.1%	100%	$0.05	55	55
Wyoming	Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	57,178	12	$58,998	10%	100%	$0.03	1,029	1,029
Wyoming	Miscellaneous Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	66,614	10	$92,360	21%	100%	$0.03	307	307
Wyoming	Miscellaneous Mfg	Other	Bldg Improvements			Per Industry	Existing	22,826	15	$17,574	35%	100%	$0.02	1,771	1,771
Wyoming	Miscellaneous Mfg	Other	Facility Energy Management			Per Industry	Existing	26,217	2	$8,920	75%	100%	$0.01	342	342
Wyoming	Miscellaneous Mfg	Other	Transformers			Per Industry	Existing	70,409	30	$73,959	20%	100%	$0.02	79	79
Wyoming	Miscellaneous Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	17,673	10	$32,982	26%	100%	$0.01	1,257	1,257

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Wyoming	Miscellaneous Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	21,824	2	$10,921	72%	100%	$0.01	401	401
Wyoming	Miscellaneous Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	11,040	15	$6,826	75%	100%	$0.04	250	250
Wyoming	Miscellaneous Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	75,179	10	$69,733	3.2%	100%	$0.00	181	181
Wyoming	Miscellaneous Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	21,523	10	$21,671	36%	100%	$0.09	199	199
Wyoming	Miscellaneous Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	5,314	10	$86,367	36%	100%	$0.07	154	154
Wyoming	Miscellaneous Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	83,612	10	$27,180	17%	100%	$0.05	307	307
Wyoming	Miscellaneous Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	71,854	10	$65,138	17%	100%	$0.02	86	86
Wyoming	Miscellaneous Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	17,444	10	$90,082	17%	100%	$0.06	1,225	1,225
Wyoming	Miscellaneous Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	21,523	10	$62,300	17%	100%	$0.05	95	95
Wyoming	Miscellaneous Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	21,966	20	$28,061	8.0%	100%	$0.03	499	499
Wyoming	Miscellaneous Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	99,429	2	$12,546	75%	100%	$0.01	481	481
Wyoming	Miscellaneous Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	53,531	10	$19,107	34%	100%	$0.13	706	706
Wyoming	Miscellaneous Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	76,876	10	$29,559	36%	100%	$0.01	5,620	5,620
Wyoming	Miscellaneous Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	7,968	2	$42,284	70%	100%	$0.02	8,305	8,305
Wyoming	Miscellaneous Mfg	Process Other	Facility Energy Management			Per Industry	Existing	43,789	2	$916	75%	100%	$0.01	35	35
Wyoming	Miscellaneous Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	23,124	10	$3,666	34%	100%	$0.02	8	8
Wyoming	Miscellaneous Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	25,889	3	$1,600	85%	100%	$0.02	23	23
Wyoming	Miscellaneous Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	2,218	10	$474	21%	100%	$0.03	0.49	0.49
Wyoming	Miscellaneous Mfg	Pumps	Facility Energy Management			Per Industry	Existing	17,473	2	$6,644	60%	100%	$0.01	202	202
Wyoming	Miscellaneous Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	55,877	15	$11,398	76%	100%	$0.05	207	207
Wyoming	Miscellaneous Mfg	Pumps	Motor rewinds			Per Industry	Existing	2,563	9	$24,521	5.3%	100%	$0.04	5	5
Wyoming	Miscellaneous Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	48,807	12	$31,100	34%	100%	$0.02	1,248	1,248
Wyoming	Miscellaneous Mfg	Pumps	Pump System Optimization			Per Industry	Existing	86,089	12	$36,213	16%	100%	$0.04	347	347
Wyoming	Miscellaneous Mfg	Pumps	Synchronous Belts			Per Industry	Existing	93,012	10	$41,291	21%	100%	$0.03	43	43
Wyoming	Paper Mfg	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	8.5%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	12%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	14%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	24%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	61%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Paper: Premium Fan			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00

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Wyoming	Paper Mfg	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	12%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	32%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	72%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	0.00	20	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	LED (High Bay)			Per Industry	Existing	0.00	20	$0.00	2.1%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Lighting Controls			Per Industry	Existing	0.00	10	$0.00	28%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	0.00	15	$0.00	40%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	0.00	15	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Screw Base CFL			Per Industry	Existing	0.00	4	$0.00	10%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	0.00	1	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	Screw Base LED			Per Industry	Existing	0.00	12	$0.00	1.8%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	11%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	0.00	13	$0.00	34%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Paper Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	0.00	13	$0.00	0.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	60%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Material Handling			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Material Handling VFD			Per Industry	Existing	0.00	10	$0.00	42%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	72%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	5.4%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	3.8%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	3.2%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	5.6%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Paper: Large Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Paper: Material Handling			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Paper: Premium Control Large Material			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	8.4%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Other	Bldg Improvements			Per Industry	Existing	0.00	15	$0.00	35%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Other	Transformers			Per Industry	Existing	0.00	30	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	0.00	10	$0.00	20%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	50%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	0.00	15	$0.00	59%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	0.00	10	$0.00	2.4%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	0.00	10	$0.00	13%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Paper Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	0.00	20	$0.00	8.0%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	0.00	10	$0.00	33%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	0.00	2	$0.00	64%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Kraft: Efficient Agitator			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Kraft: Effluent Treatment System			Per Industry	Existing	0.00	10	$0.00	7.3%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Mech Pulp: Premium Process			Per Industry	Existing	0.00	5	$0.00	18%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement			Per Industry	Existing	0.00	1	$0.00	28%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Other	Paper: Efficient Pulp Screen			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	0.00	10	$0.00	27%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	0.00	3	$0.00	67%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	62%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	Motor rewinds			Per Industry	Existing	0.00	9	$0.00	4.4%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	Pump Equipment Upgrade			Per Industry	Existing	0.00	12	$0.00	28%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	Pump System Optimization			Per Industry	Existing	0.00	12	$0.00	75%	100%	.	0.00	0.00
Wyoming	Paper Mfg	Pumps	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	17%	100%	.	0.00	0.00
Wyoming	Petroleum Refining	Fans	Facility Energy Management			Per Industry	Existing	71,618	2	$7,777	3.0%	100%	$0.01	11	11
Wyoming	Petroleum Refining	Fans	Fan System Optimization			Per Industry	Existing	52,003	10	$16,853	30%	100%	$0.03	495	495
Wyoming	Petroleum Refining	Fans	High Efficiency Motors			Per Industry	Existing	99,516	15	$30,397	76%	100%	$0.05	242	242
Wyoming	Petroleum Refining	Fans	Improved Controls - Fans			Per Industry	Existing	38,607	10	$11,938	34%	100%	$0.01	451	451
Wyoming	Petroleum Refining	Fans	Properly Sized Fans			Per Industry	Existing	3,497	10	$34,638	15%	100%	$0.02	340	340
Wyoming	Petroleum Refining	Fans	Synchronous Belts			Per Industry	Existing	25,930	10	$48,333	21%	100%	$0.03	51	51
Wyoming	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	5,903	15	$30,276	14%	100%	$0.02	29	29
Wyoming	Petroleum Refining	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	57,173	15	$61,647	5.0%	100%	$0.01	35	35
Wyoming	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	75,743	20	$98,200	1.0%	100%	$0.01	15	15

Table C-2.3. Industrial Measure Details

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Wyoming	Petroleum Refining	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	91,914	20	$66,066	6.5%	100%	$0.01	34	34
Wyoming	Petroleum Refining	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	97,348	20	$47,380	2.5%	100%	$0.01	29	29
Wyoming	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	53,003	15	$22,124	45%	100%	$0.02	73	73
Wyoming	Petroleum Refining	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	91,009	15	$44,509	20%	100%	$0.01	83	83
Wyoming	Petroleum Refining	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	37,555	15	$3,237	2.5%	100%	$0.00	86	86
Wyoming	Petroleum Refining	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	73,033	30	$28,799	4.0%	100%	$0.01	58	58
Wyoming	Petroleum Refining	Hvac	Improved Controls - HVAC			Per Industry	Existing	25,069	10	$61,663	33%	100%	$0.01	432	432
Wyoming	Petroleum Refining	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	93,256	10	$8,042	73%	100%	$0.00	230	230
Wyoming	Petroleum Refining	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	49,610	15	$95,539	0.0%	100%	$0.24	0.00	0.00
Wyoming	Petroleum Refining	Lighting	Facility Energy Management			Per Industry	Existing	82,859	2	$1,734	75%	100%	$0.01	66	66
Wyoming	Petroleum Refining	Lighting	Induction (High Bay)			Per Industry	Existing	52,552	20	$46,455	0.0%	100%	$3.75	0.00	0.00
Wyoming	Petroleum Refining	Lighting	LED (High Bay)			Per Industry	Existing	32,019	20	$89,619	2.1%	100%	$1.72	18	18
Wyoming	Petroleum Refining	Lighting	Lighting Controls			Per Industry	Existing	29,026	10	$6,229	28%	100%	$0.02	250	250
Wyoming	Petroleum Refining	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	35,307	15	$94,683	40%	100%	$0.36	402	402
Wyoming	Petroleum Refining	Lighting	Metal Halide (High Bay)			Per Industry	Existing	23,794	15	$92,226	0.0%	100%	$0.25	0.00	0.00
Wyoming	Petroleum Refining	Lighting	Screw Base CFL			Per Industry	Existing	8,828	4	$74,630	10%	100%	$0.01	404	404
Wyoming	Petroleum Refining	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	58,101	1	$58,767	0.0%	100%	$0.00	0.00	0.00
Wyoming	Petroleum Refining	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	70,760	1	$51,597	0.0%	100%	$0.00	0.00	0.00
Wyoming	Petroleum Refining	Lighting	Screw Base LED			Per Industry	Existing	38,551	12	$11,109	1.8%	100%	$0.02	72	72
Wyoming	Petroleum Refining	Lighting	T5 Linear Florescent			Per Industry	Existing	55,161	13	$66,076	11%	100%	$0.49	164	164
Wyoming	Petroleum Refining	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	95,583	13	$62,413	34%	100%	$0.10	398	398
Wyoming	Petroleum Refining	Lighting	T8 Linear Florescent			Per Industry	Existing	45,446	13	$96,736	0.0%	100%	$0.12	0.00	0.00
Wyoming	Petroleum Refining	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	33,390	13	$38,357	0.0%	100%	$0.13	0.00	0.00
Wyoming	Petroleum Refining	Motors Other	Facility Energy Management			Per Industry	Existing	57,891	2	$22,141	75%	100%	$0.01	850	850
Wyoming	Petroleum Refining	Motors Other	High Efficiency Motors			Per Industry	Existing	52,639	15	$71,205	76%	100%	$0.05	695	695

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Wyoming	Petroleum Refining	Motors Other	Improved Controls - Motors			Per Industry	Existing	95,422	10	$6,690	34%	100%	$0.02	732	732
Wyoming	Petroleum Refining	Motors Other	Motors Other			Per Industry	Existing	55,908	15	$8,314	91%	100%	$0.00	446	446
Wyoming	Petroleum Refining	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	18,044	10	$72,579	6.8%	100%	$0.03	23	23
Wyoming	Petroleum Refining	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	91,625	11.2	$13,302	4.8%	100%	$0.05	30	30
Wyoming	Petroleum Refining	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	14,494	8	$45,622	4.1%	100%	$0.03	13	13
Wyoming	Petroleum Refining	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	20,280	8	$32,575	4.1%	100%	$0.02	13	13
Wyoming	Petroleum Refining	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	45,217	9	$5,288	7.2%	100%	$0.05	26	26
Wyoming	Petroleum Refining	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	9,569	12	$21,947	11%	100%	$0.03	491	491
Wyoming	Petroleum Refining	Motors Other	Synchronous Belts			Per Industry	Existing	43,158	10	$37,591	21%	100%	$0.03	146	146
Wyoming	Petroleum Refining	Other	Bldg Improvements			Per Industry	Existing	22,659	15	$55,268	35%	100%	$0.02	158	158
Wyoming	Petroleum Refining	Other	Facility Energy Management			Per Industry	Existing	38,143	2	$798	75%	100%	$0.01	30	30
Wyoming	Petroleum Refining	Other	Transformers			Per Industry	Existing	33,149	30	$6,618	20%	100%	$0.02	7	7
Wyoming	Petroleum Refining	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	10,429	10	$91,351	27%	100%	$0.01	1,064	1,064
Wyoming	Petroleum Refining	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	16,847	10	$85,254	18%	100%	$0.01	886	886
Wyoming	Petroleum Refining	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	4,798	10	$56,602	31%	100%	$0.02	2,292	2,292
Wyoming	Petroleum Refining	Process Aircomp	Facility Energy Management			Per Industry	Existing	28,581	2	$8,970	41%	100%	$0.01	188	188
Wyoming	Petroleum Refining	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	55,461	15	$87,737	77%	100%	$0.04	211	211
Wyoming	Petroleum Refining	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	32,579	10	$39,404	3.3%	100%	$0.00	153	153
Wyoming	Petroleum Refining	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	28,334	10	$64,193	35%	100%	$0.09	159	159
Wyoming	Petroleum Refining	Process Aircomp	Outside Air Intake			Per Industry	Existing	32,890	10	$53,065	35%	100%	$0.07	124	124
Wyoming	Petroleum Refining	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	82,774	10	$32,980	18%	100%	$0.05	259	259
Wyoming	Petroleum Refining	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	87,540	10	$53,499	18%	100%	$0.02	72	72
Wyoming	Petroleum Refining	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	17,132	10	$91,534	18%	100%	$0.06	1,037	1,037
Wyoming	Petroleum Refining	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	28,334	10	$33,299	18%	100%	$0.05	80	80
Wyoming	Petroleum Refining	Process Cool	Equipment: Chillers			Per Industry	Existing	22,514	20	$78,346	8.0%	100%	$0.03	156	156
Wyoming	Petroleum Refining	Process Cool	Facility Energy Management			Per Industry	Existing	87,645	2	$3,927	75%	100%	$0.01	150	150
Wyoming	Petroleum Refining	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	11,535	10	$38,151	34%	100%	$0.13	221	221
Wyoming	Petroleum Refining	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	94,223	10	$55,932	33%	100%	$0.01	1,092	1,092
Wyoming	Petroleum Refining	Process Heat	Process Heat O&M			Per Industry	Existing	74,168	2	$73,158	63%	100%	$0.02	1,613	1,613
Wyoming	Petroleum Refining	Process Other	Facility Energy Management			Per Industry	Existing	3,808	2	$79	75%	100%	$0.01	3	3

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Petroleum Refining	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	51,692	10	$82,585	34%	100%	$0.02	419	419
Wyoming	Petroleum Refining	Process Refrig	Optimization of operating parameters			Per Industry	Existing	89,411	3	$79,701	85%	100%	$0.02	1,174	1,174
Wyoming	Petroleum Refining	Process Refrig	Synchronous Belts			Per Industry	Existing	10,491	10	$23,637	21%	100%	$0.03	24	24
Wyoming	Petroleum Refining	Pumps	Facility Energy Management			Per Industry	Existing	72,710	2	$14,079	75%	100%	$0.01	540	540
Wyoming	Petroleum Refining	Pumps	High Efficiency Motors			Per Industry	Existing	42,191	15	$36,048	79%	100%	$0.05	456	456
Wyoming	Petroleum Refining	Pumps	Motor rewinds			Per Industry	Existing	17,327	9	$51,960	5.5%	100%	$0.04	12	12
Wyoming	Petroleum Refining	Pumps	Pump Equipment Upgrade			Per Industry	Existing	7,850	12	$13,481	35%	100%	$0.02	2,752	2,752
Wyoming	Petroleum Refining	Pumps	Pump System Optimization			Per Industry	Existing	20,318	12	$36,210	75%	100%	$0.04	3,552	3,552
Wyoming	Petroleum Refining	Pumps	Synchronous Belts			Per Industry	Existing	8,983	10	$87,493	22%	100%	$0.03	96	96
Wyoming	Stone Clay Glass Products	Fans	Facility Energy Management			Per Industry	Existing	50,535	2	$11,522	25%	100%	$0.01	149	149
Wyoming	Stone Clay Glass Products	Fans	Fan Equipment Upgrade			Per Industry	Existing	66,088	10	$97,093	23%	100%	$0.01	2,579	2,579
Wyoming	Stone Clay Glass Products	Fans	High Efficiency Motors			Per Industry	Existing	43,720	15	$93,178	76%	100%	$0.05	363	363
Wyoming	Stone Clay Glass Products	Fans	Improved Controls - Fans			Per Industry	Existing	34,938	10	$65,831	34%	100%	$0.01	675	675
Wyoming	Stone Clay Glass Products	Fans	Properly Sized Fans			Per Industry	Existing	16,232	10	$95,750	15%	100%	$0.02	509	509
Wyoming	Stone Clay Glass Products	Fans	Synchronous Belts			Per Industry	Existing	34,704	10	$71,603	21%	100%	$0.03	76	76
Wyoming	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	749	15	$17,745	14%	100%	$0.02	115	115
Wyoming	Stone Clay Glass Products	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	55,717	15	$39,742	5.0%	100%	$0.01	136	136
Wyoming	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	39,098	20	$70,793	1.0%	100%	$0.01	61	61
Wyoming	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	13,032	20	$56,931	6.5%	100%	$0.01	133	133
Wyoming	Stone Clay Glass Products	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	67,534	20	$73,154	2.5%	100%	$0.01	114	114
Wyoming	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	95,023	15	$86,041	45%	100%	$0.02	286	286
Wyoming	Stone Clay Glass Products	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	20,615	15	$73,095	20%	100%	$0.01	325	325
Wyoming	Stone Clay Glass Products	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	90,698	15	$12,590	2.5%	100%	$0.00	337	337

Table C-2.3. Industrial Measure Details

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Wyoming	Stone Clay Glass Products	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	39,660	30	$895	4.0%	100%	$0.01	228	228
Wyoming	Stone Clay Glass Products	Hvac	Improved Controls - HVAC			Per Industry	Existing	64,237	10	$39,805	33%	100%	$0.01	1,705	1,705
Wyoming	Stone Clay Glass Products	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	40,461	10	$31,276	74%	100%	$0.00	907	907
Wyoming	Stone Clay Glass Products	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	50,622	15	$86,749	0.0%	100%	$0.24	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	Facility Energy Management			Per Industry	Existing	26,150	2	$6,826	75%	100%	$0.01	262	262
Wyoming	Stone Clay Glass Products	Lighting	Induction (High Bay)			Per Industry	Existing	94,098	20	$15,088	0.0%	100%	$3.75	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	LED (High Bay)			Per Industry	Existing	74,999	20	$97,919	2.1%	100%	$1.72	74	74
Wyoming	Stone Clay Glass Products	Lighting	Lighting Controls			Per Industry	Existing	63,217	10	$18,141	28%	100%	$0.02	986	986
Wyoming	Stone Clay Glass Products	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	81,561	15	$448	40%	100%	$0.36	1,583	1,583
Wyoming	Stone Clay Glass Products	Lighting	Metal Halide (High Bay)			Per Industry	Existing	61,762	15	$99,229	0.0%	100%	$0.25	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	Screw Base CFL			Per Industry	Existing	5,093	4	$93,761	10%	100%	$0.01	1,592	1,592
Wyoming	Stone Clay Glass Products	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	30,936	1	$31,321	0.0%	100%	$0.00	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	27,493	1	$3,098	0.0%	100%	$0.00	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	Screw Base LED			Per Industry	Existing	22,087	12	$5,451	1.8%	100%	$0.02	283	283
Wyoming	Stone Clay Glass Products	Lighting	T5 Linear Florescent			Per Industry	Existing	34,192	13	$41,119	11%	100%	$0.49	646	646
Wyoming	Stone Clay Glass Products	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	12,441	13	$94,636	34%	100%	$0.10	1,567	1,567
Wyoming	Stone Clay Glass Products	Lighting	T8 Linear Florescent			Per Industry	Existing	27,850	13	$36,118	0.0%	100%	$0.12	0.00	0.00
Wyoming	Stone Clay Glass Products	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	61,260	13	$80,810	0.0%	100%	$0.13	0.00	0.00
Wyoming	Stone Clay Glass Products	Motors Other	Facility Energy Management			Per Industry	Existing	67,216	2	$32,801	75%	100%	$0.01	1,259	1,259
Wyoming	Stone Clay Glass Products	Motors Other	High Efficiency Motors			Per Industry	Existing	63,144	15	$49,924	75%	100%	$0.05	1,013	1,013
Wyoming	Stone Clay Glass Products	Motors Other	Improved Controls - Motors			Per Industry	Existing	56,123	10	$6,202	34%	100%	$0.02	1,067	1,067

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Wyoming	Stone Clay Glass Products	Motors Other	Motors Other			Per Industry	Existing	75,406	15	$12,316	90%	100%	$0.00	650	650
Wyoming	Stone Clay Glass Products	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	71,168	10	$7,523	6.7%	100%	$0.03	34	34
Wyoming	Stone Clay Glass Products	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	76,465	11.2	$15,997	4.7%	100%	$0.05	44	44
Wyoming	Stone Clay Glass Products	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	65,908	8	$67,587	4.0%	100%	$0.03	19	19
Wyoming	Stone Clay Glass Products	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	74,479	8	$48,258	4.0%	100%	$0.02	20	20
Wyoming	Stone Clay Glass Products	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	11,423	9	$55,979	7.1%	100%	$0.05	38	38
Wyoming	Stone Clay Glass Products	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	84,423	12	$65,821	10%	100%	$0.03	717	717
Wyoming	Stone Clay Glass Products	Motors Other	Synchronous Belts			Per Industry	Existing	52,809	10	$3,834	21%	100%	$0.03	214	214
Wyoming	Stone Clay Glass Products	Other	Bldg Improvements			Per Industry	Existing	20,398	15	$34,187	35%	100%	$0.02	1,245	1,245
Wyoming	Stone Clay Glass Products	Other	Facility Energy Management			Per Industry	Existing	99,653	2	$6,271	75%	100%	$0.01	240	240
Wyoming	Stone Clay Glass Products	Other	Transformers			Per Industry	Existing	60,417	30	$51,997	20%	100%	$0.02	55	55
Wyoming	Stone Clay Glass Products	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	96,826	10	$83,478	26%	100%	$0.01	1,530	1,530
Wyoming	Stone Clay Glass Products	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	87,787	10	$74,446	17%	100%	$0.01	1,274	1,274
Wyoming	Stone Clay Glass Products	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	77,277	10	$20,870	30%	100%	$0.02	3,295	3,295
Wyoming	Stone Clay Glass Products	Process Aircomp	Facility Energy Management			Per Industry	Existing	34,923	2	$13,288	42%	100%	$0.01	286	286
Wyoming	Stone Clay Glass Products	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	78,454	15	$29,979	75%	100%	$0.04	304	304
Wyoming	Stone Clay Glass Products	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	18,511	10	$6,521	3.2%	100%	$0.00	221	221
Wyoming	Stone Clay Glass Products	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	34,557	10	$91,389	36%	100%	$0.09	242	242
Wyoming	Stone Clay Glass Products	Process Aircomp	Outside Air Intake			Per Industry	Existing	93,161	10	$26,759	36%	100%	$0.07	188	188
Wyoming	Stone Clay Glass Products	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	48,515	10	$41,440	17%	100%	$0.05	373	373
Wyoming	Stone Clay Glass Products	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	74,122	10	$79,256	17%	100%	$0.02	104	104

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Wyoming	Stone Clay Glass Products	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	73,371	10	$94,799	17%	100%	$0.06	1,491	1,491
Wyoming	Stone Clay Glass Products	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	34,557	10	$97,477	17%	100%	$0.05	115	115
Wyoming	Stone Clay Glass Products	Process Cool	Equipment: Chillers			Per Industry	Existing	72,475	20	$96,445	8.0%	100%	$0.03	194	194
Wyoming	Stone Clay Glass Products	Process Cool	Facility Energy Management			Per Industry	Existing	33,973	2	$4,897	75%	100%	$0.01	188	188
Wyoming	Stone Clay Glass Products	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	62,517	10	$71,015	34%	100%	$0.13	275	275
Wyoming	Stone Clay Glass Products	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	61,077	10	$76,487	36%	100%	$0.01	8,292	8,292
Wyoming	Stone Clay Glass Products	Process Heat	Process Heat O&M			Per Industry	Existing	90,150	2	$5,051	70%	100%	$0.02	12,254	12,254
Wyoming	Stone Clay Glass Products	Process Other	Facility Energy Management			Per Industry	Existing	40,949	2	$857	75%	100%	$0.01	32	32
Wyoming	Stone Clay Glass Products	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	6,177	10	$70,491	34%	100%	$0.02	621	621
Wyoming	Stone Clay Glass Products	Process Refrig	Optimization of operating parameters			Per Industry	Existing	10,202	3	$18,073	85%	100%	$0.02	1,739	1,739
Wyoming	Stone Clay Glass Products	Process Refrig	Synchronous Belts			Per Industry	Existing	63,687	10	$35,017	21%	100%	$0.03	36	36
Wyoming	Stone Clay Glass Products	Pumps	Facility Energy Management			Per Industry	Existing	96,589	2	$20,858	75%	100%	$0.01	800	800
Wyoming	Stone Clay Glass Products	Pumps	High Efficiency Motors			Per Industry	Existing	3,230	15	$49,695	76%	100%	$0.05	650	650
Wyoming	Stone Clay Glass Products	Pumps	Motor rewinds			Per Industry	Existing	21,959	9	$76,976	5.3%	100%	$0.04	18	18
Wyoming	Stone Clay Glass Products	Pumps	Pump Equipment Upgrade			Per Industry	Existing	26,235	12	$53,279	34%	100%	$0.02	3,920	3,920
Wyoming	Stone Clay Glass Products	Pumps	Synchronous Belts			Per Industry	Existing	5,889	10	$29,618	21%	100%	$0.03	137	137
Wyoming	Transportation Equipment Mfg	Fans	Facility Energy Management			Per Industry	Existing	76,785	2	$3,700	5.3%	100%	$0.01	9	9
Wyoming	Transportation Equipment Mfg	Fans	Fan System Optimization			Per Industry	Existing	38,316	10	$50,733	30%	100%	$0.03	238	238
Wyoming	Transportation Equipment Mfg	Fans	High Efficiency Motors			Per Industry	Existing	42,485	15	$62,032	76%	100%	$0.05	116	116
Wyoming	Transportation Equipment Mfg	Fans	Improved Controls - Fans			Per Industry	Existing	89,227	10	$53,251	34%	100%	$0.01	216	216
Wyoming	Transportation Equipment Mfg	Fans	Properly Sized Fans			Per Industry	Existing	671	10	$59,193	15%	100%	$0.02	163	163

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Wyoming	Transportation Equipment Mfg	Fans	Synchronous Belts			Per Industry	Existing	7,479	10	$22,993	21%	100%	$0.03	24	24
Wyoming	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	44,694	15	$83,025	14%	100%	$0.02	180	180
Wyoming	Transportation Equipment Mfg	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	72,639	15	$72,659	5.0%	100%	$0.01	212	212
Wyoming	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	20,926	20	$98,131	1.0%	100%	$0.01	95	95
Wyoming	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	73,642	20	$99,377	6.5%	100%	$0.01	207	207
Wyoming	Transportation Equipment Mfg	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	33,509	20	$90,918	2.5%	100%	$0.01	177	177
Wyoming	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	24,912	15	$33,744	45%	100%	$0.02	445	445
Wyoming	Transportation Equipment Mfg	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	63,664	15	$69,061	20%	100%	$0.01	506	506
Wyoming	Transportation Equipment Mfg	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	71,140	15	$19,571	2.5%	100%	$0.00	524	524
Wyoming	Transportation Equipment Mfg	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	36	30	$78,597	4.0%	100%	$0.01	355	355
Wyoming	Transportation Equipment Mfg	Hvac	Improved Controls - HVAC			Per Industry	Existing	5,590	10	$72,756	33%	100%	$0.01	2,651	2,651
Wyoming	Transportation Equipment Mfg	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	72,748	10	$48,616	74%	100%	$0.00	1,410	1,410
Wyoming	Transportation Equipment Mfg	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	23,294	15	$23,875	0.0%	100%	$0.24	0.00	0.00
Wyoming	Transportation Equipment Mfg	Lighting	Facility Energy Management			Per Industry	Existing	11,040	2	$10,696	75%	100%	$0.01	410	410
Wyoming	Transportation Equipment Mfg	Lighting	Induction (High Bay)			Per Industry	Existing	57,640	20	$78,091	0.0%	100%	$3.75	0.00	0.00
Wyoming	Transportation Equipment Mfg	Lighting	LED (High Bay)			Per Industry	Existing	31,556	20	$98,479	2.1%	100%	$1.72	116	116
Wyoming	Transportation Equipment Mfg	Lighting	Lighting Controls			Per Industry	Existing	13,095	10	$55,181	28%	100%	$0.02	1,545	1,545
Wyoming	Transportation Equipment Mfg	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	68,593	15	$36,467	40%	100%	$0.36	2,480	2,480
Wyoming	Transportation Equipment Mfg	Lighting	Metal Halide (High Bay)			Per Industry	Existing	30,550	15	$36,409	0.0%	100%	$0.25	0.00	0.00

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Wyoming	Transportation Equipment Mfg	Lighting	Screw Base CFL			Per Industry	Existing	57,786	4	$60,291	10%	100%	$0.01	2,495	2,495
Wyoming	Transportation Equipment Mfg	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	77,882	1	$62,454	0.0%	100%	$0.00	0.00	0.00
Wyoming	Transportation Equipment Mfg	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	70,498	1	$18,232	0.0%	100%	$0.00	0.00	0.00
Wyoming	Transportation Equipment Mfg	Lighting	Screw Base LED			Per Industry	Existing	41,103	12	$69,072	1.8%	100%	$0.02	444	444
Wyoming	Transportation Equipment Mfg	Lighting	T5 Linear Florescent			Per Industry	Existing	58,081	13	$45,495	11%	100%	$0.49	1,012	1,012
Wyoming	Transportation Equipment Mfg	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	57,111	13	$19,013	34%	100%	$0.10	2,456	2,456
Wyoming	Transportation Equipment Mfg	Lighting	T8 Linear Florescent			Per Industry	Existing	14,368	13	$13,945	0.0%	100%	$0.12	0.00	0.00
Wyoming	Transportation Equipment Mfg	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	90,293	13	$20,927	0.0%	100%	$0.13	0.00	0.00
Wyoming	Transportation Equipment Mfg	Motors Other	Facility Energy Management			Per Industry	Existing	96,653	2	$8,301	75%	100%	$0.01	318	318
Wyoming	Transportation Equipment Mfg	Motors Other	High Efficiency Motors			Per Industry	Existing	19,694	15	$39,182	75%	100%	$0.05	256	256
Wyoming	Transportation Equipment Mfg	Motors Other	Improved Controls - Motors			Per Industry	Existing	48,177	10	$77,498	34%	100%	$0.02	270	270
Wyoming	Transportation Equipment Mfg	Motors Other	Motors Other			Per Industry	Existing	70,941	15	$3,117	90%	100%	$0.00	164	164
Wyoming	Transportation Equipment Mfg	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	19,249	10	$27,213	6.7%	100%	$0.03	8	8
Wyoming	Transportation Equipment Mfg	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	21,828	11.2	$79,977	4.7%	100%	$0.05	11	11
Wyoming	Transportation Equipment Mfg	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	17,918	8	$17,106	4.0%	100%	$0.03	5	5
Wyoming	Transportation Equipment Mfg	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	20,088	8	$12,214	4.0%	100%	$0.02	5	5
Wyoming	Transportation Equipment Mfg	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	29,438	9	$39,477	7.1%	100%	$0.05	9	9
Wyoming	Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	15,859	12	$45,681	10%	100%	$0.03	181	181
Wyoming	Transportation Equipment Mfg	Motors Other	Synchronous Belts			Per Industry	Existing	41,150	10	$51,589	21%	100%	$0.03	54	54
Wyoming	Transportation Equipment Mfg	Other	Bldg Improvements			Per Industry	Existing	70,981	15	$5,427	35%	100%	$0.02	589	589
Wyoming	Transportation Equipment Mfg	Other	Facility Energy Management			Per Industry	Existing	41,775	2	$2,967	75%	100%	$0.01	113	113

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State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Transportation Equipment Mfg	Other	Transformers			Per Industry	Existing	23,211	30	$24,601	20%	100%	$0.02	26	26
Wyoming	Transportation Equipment Mfg	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	62,624	10	$83,729	26%	100%	$0.01	991	991
Wyoming	Transportation Equipment Mfg	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	28,952	10	$77,875	17%	100%	$0.01	826	826
Wyoming	Transportation Equipment Mfg	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	25,762	10	$26,462	30%	100%	$0.02	2,136	2,136
Wyoming	Transportation Equipment Mfg	Process Aircomp	Facility Energy Management			Per Industry	Existing	11,509	2	$8,612	42%	100%	$0.01	185	185
Wyoming	Transportation Equipment Mfg	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	45,285	15	$84,242	75%	100%	$0.04	197	197
Wyoming	Transportation Equipment Mfg	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	59,991	10	$33,851	3.2%	100%	$0.00	143	143
Wyoming	Transportation Equipment Mfg	Process Aircomp	Low Pressure-drop Filters			Per Industry	Existing	11,271	10	$53,669	36%	100%	$0.09	157	157
Wyoming	Transportation Equipment Mfg	Process Aircomp	Outside Air Intake			Per Industry	Existing	19,629	10	$46,968	36%	100%	$0.07	122	122
Wyoming	Transportation Equipment Mfg	Process Aircomp	Receiver Capacity Addition			Per Industry	Existing	27,692	10	$15,733	17%	100%	$0.05	242	242
Wyoming	Transportation Equipment Mfg	Process Aircomp	Refrigerated Cycling Dryers			Per Industry	Existing	72,102	10	$51,368	17%	100%	$0.02	67	67
Wyoming	Transportation Equipment Mfg	Process Aircomp	VFD Controlled Compressor			Per Industry	Existing	97,357	10	$251	17%	100%	$0.06	966	966
Wyoming	Transportation Equipment Mfg	Process Aircomp	Zero Loss Condensate Drain			Per Industry	Existing	11,271	10	$27,989	17%	100%	$0.05	75	75
Wyoming	Transportation Equipment Mfg	Process Cool	Equipment: Chillers			Per Industry	Existing	98,648	20	$93,342	8.0%	100%	$0.03	128	128
Wyoming	Transportation Equipment Mfg	Process Cool	Facility Energy Management			Per Industry	Existing	54,300	2	$3,229	75%	100%	$0.01	123	123
Wyoming	Transportation Equipment Mfg	Process Cool	Improved Controls - Process Cooling			Per Industry	Existing	2,864	10	$42,520	34%	100%	$0.13	181	181
Wyoming	Transportation Equipment Mfg	Process Heat	Improved Controls - Process Heating			Per Industry	Existing	19,795	10	$58,011	36%	100%	$0.01	1,987	1,987
Wyoming	Transportation Equipment Mfg	Process Heat	Process Heat O&M			Per Industry	Existing	28,370	2	$21,050	70%	100%	$0.02	2,937	2,937
Wyoming	Transportation Equipment Mfg	Process Other	Facility Energy Management			Per Industry	Existing	44,617	2	$933	75%	100%	$0.01	35	35
Wyoming	Transportation Equipment Mfg	Process Refrig	Adjustable speed drive on compressors			Per Industry	Existing	24,895	10	$14,922	34%	100%	$0.02	264	264
Wyoming	Transportation Equipment Mfg	Process Refrig	Optimization of operating parameters			Per Industry	Existing	11,578	3	$50,165	85%	100%	$0.02	739	739

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Transportation Equipment Mfg	Process Refrig	Synchronous Belts			Per Industry	Existing	69,545	10	$14,877	21%	100%	$0.03	15	15
Wyoming	Transportation Equipment Mfg	Pumps	Facility Energy Management			Per Industry	Existing	86,254	2	$8,084	75%	100%	$0.01	310	310
Wyoming	Transportation Equipment Mfg	Pumps	High Efficiency Motors			Per Industry	Existing	11,313	15	$35,533	76%	100%	$0.05	251	251
Wyoming	Transportation Equipment Mfg	Pumps	Motor rewinds			Per Industry	Existing	24,783	9	$29,834	5.3%	100%	$0.04	7	7
Wyoming	Transportation Equipment Mfg	Pumps	Synchronous Belts			Per Industry	Existing	34,828	10	$50,236	21%	100%	$0.03	53	53
Wyoming	Wastewater	Fans	Efficient Centrifugal Fan			Per Industry	Existing	0.00	10	$0.00	11%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	3.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Fan Equipment Upgrade			Per Industry	Existing	0.00	10	$0.00	23%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Fan System Optimization			Per Industry	Existing	0.00	10	$0.00	30%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Improved Controls - Fans			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Properly Sized Fans			Per Industry	Existing	0.00	10	$0.00	15%	100%	.	0.00	0.00
Wyoming	Wastewater	Fans	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00

Table C-2.3. Industrial Measure Details

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Wyoming	Wastewater	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	30,960	15	$60,786	0.0%	100%	$0.24	0.00	0.00
Wyoming	Wastewater	Lighting	Facility Energy Management			Per Industry	Existing	25,529	2	$534	75%	100%	$0.01	20	20
Wyoming	Wastewater	Lighting	Induction (High Bay)			Per Industry	Existing	77,813	20	$56,465	0.0%	100%	$3.75	0.00	0.00
Wyoming	Wastewater	Lighting	LED (High Bay)			Per Industry	Existing	56,351	20	$56,246	2.1%	100%	$1.72	5	5
Wyoming	Wastewater	Lighting	Lighting Controls			Per Industry	Existing	55,428	10	$32,730	28%	100%	$0.02	77	77
Wyoming	Wastewater	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	88,174	15	$61,061	40%	100%	$0.36	123	123
Wyoming	Wastewater	Lighting	Metal Halide (High Bay)			Per Industry	Existing	61,384	15	$36,522	0.0%	100%	$0.25	0.00	0.00
Wyoming	Wastewater	Lighting	Screw Base CFL			Per Industry	Existing	11,905	4	$22,994	10%	100%	$0.01	124	124
Wyoming	Wastewater	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	73,033	1	$18,106	0.0%	100%	$0.00	0.00	0.00
Wyoming	Wastewater	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	68,287	1	$15,897	0.0%	100%	$0.00	0.00	0.00
Wyoming	Wastewater	Lighting	Screw Base LED			Per Industry	Existing	21,063	12	$88,287	1.8%	100%	$0.02	22	22
Wyoming	Wastewater	Lighting	T5 Linear Florescent			Per Industry	Existing	17,534	13	$60,893	11%	100%	$0.49	50	50
Wyoming	Wastewater	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	37,556	13	$65,715	34%	100%	$0.10	122	122
Wyoming	Wastewater	Lighting	T8 Linear Florescent			Per Industry	Existing	60,487	13	$45,480	0.0%	100%	$0.12	0.00	0.00
Wyoming	Wastewater	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	49,205	13	$50,736	0.0%	100%	$0.13	0.00	0.00
Wyoming	Wastewater	Motors Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	High Efficiency Motors			Per Industry	Existing	0.00	15	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Improved Controls - Motors			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors Other			Per Industry	Existing	0.00	15	$0.00	90%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	0.00	10	$0.00	6.7%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	0.00	11.2	$0.00	4.7%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	0.00	8	$0.00	4.0%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	0.00	9	$0.00	7.1%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	0.00	12	$0.00	11%	100%	.	0.00	0.00
Wyoming	Wastewater	Motors Other	Synchronous Belts			Per Industry	Existing	0.00	10	$0.00	21%	100%	.	0.00	0.00
Wyoming	Wastewater	Other	Bldg Improvements			Per Industry	Existing	29,093	15	$78,408	35%	100%	$0.02	798	798
Wyoming	Wastewater	Other	Facility Energy Management			Per Industry	Existing	92,142	2	$4,021	75%	100%	$0.01	154	154
Wyoming	Wastewater	Other	Transformers			Per Industry	Existing	66,984	30	$33,341	20%	100%	$0.02	35	35
Wyoming	Wastewater	Process Aircomp	Air Compressor Demand Reduction			Per Industry	Existing	808	10	$97,140	26%	100%	$0.01	2,140	2,140
Wyoming	Wastewater	Process Aircomp	Air Compressor Equipment			Per Industry	Existing	89,578	10	$84,486	17%	100%	$0.01	1,783	1,783
Wyoming	Wastewater	Process Aircomp	Air Compressor Optimization			Per Industry	Existing	38,103	10	$70,289	30%	100%	$0.02	4,610	4,610

Table C-2.3. Industrial Measure Details

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Wyoming	Wastewater	Process Aircomp	Facility Energy Management			Per Industry	Existing	89,499	2	$18,617	66%	100%	$0.01	630	630
Wyoming	Wastewater	Process Aircomp	High efficiency Compressor motors			Per Industry	Existing	30,198	15	$82,095	75%	100%	$0.04	426	426
Wyoming	Wastewater	Process Aircomp	Improved Controls - Air Compressor			Per Industry	Existing	92,048	10	$89,327	8.8%	100%	$0.00	847	847
Wyoming	Wastewater	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Wastewater	Pumps	Facility Energy Management			Per Industry	Existing	36,483	2	$4,949	75%	100%	$0.01	190	190
Wyoming	Wastewater	Pumps	High Efficiency Motors			Per Industry	Existing	90,600	15	$82,980	75%	100%	$0.05	153	153
Wyoming	Wastewater	Pumps	Motor rewinds			Per Industry	Existing	76,398	9	$18,265	5.3%	100%	$0.04	4	4
Wyoming	Wastewater	Pumps	Pump Equipment Upgrade			Per Industry	Existing	68,986	12	$21,123	34%	100%	$0.02	923	923
Wyoming	Wastewater	Pumps	Pump System Optimization			Per Industry	Existing	53,909	12	$99,421	75%	100%	$0.04	1,248	1,248
Wyoming	Wastewater	Pumps	Synchronous Belts			Per Industry	Existing	43,773	10	$30,757	21%	100%	$0.03	32	32
Wyoming	Water	Fans	Efficient Centrifugal Fan			Per Industry	Existing	57,692	10	$19,580	11%	100%	$0.03	569	569
Wyoming	Water	Fans	Facility Energy Management			Per Industry	Existing	65,576	2	$9,744	3.0%	100%	$0.01	14	14
Wyoming	Water	Fans	Fan Equipment Upgrade			Per Industry	Existing	50,962	10	$58,653	23%	100%	$0.01	2,181	2,181
Wyoming	Water	Fans	Fan System Optimization			Per Industry	Existing	44,404	10	$96,965	30%	100%	$0.03	616	616
Wyoming	Water	Fans	High Efficiency Motors			Per Industry	Existing	75,245	15	$63,367	75%	100%	$0.05	301	301
Wyoming	Water	Fans	Improved Controls - Fans			Per Industry	Existing	51,771	10	$40,240	34%	100%	$0.01	561	561
Wyoming	Water	Fans	Properly Sized Fans			Per Industry	Existing	35,335	10	$19,246	15%	100%	$0.02	423	423
Wyoming	Water	Fans	Synchronous Belts			Per Industry	Existing	83,053	10	$60,553	21%	100%	$0.03	63	63
Wyoming	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	14%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Air Source Heat Pump 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	5.0%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Chillers <150 tons (screw) - Advanced Efficiency			Per Industry	Existing	0.00	20	$0.00	1.0%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Chillers <150 tons (screw) - High Efficiency			Per Industry	Existing	0.00	20	$0.00	6.5%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Chillers <150 tons (screw) - Premium Efficiency			Per Industry	Existing	0.00	20	$0.00	2.5%	100%	.	0.00	0.00
Wyoming	Water	Hvac	DX Package 65 to 135 kBTU/hr - High Efficiency			Per Industry	Existing	0.00	15	$0.00	45%	100%	.	0.00	0.00
Wyoming	Water	Hvac	DX Package 65 to 135 kBTU/hr - Premium Efficiency			Per Industry	Existing	0.00	15	$0.00	20%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	15	$0.00	2.5%	100%	.	0.00	0.00

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Wyoming	Water	Hvac	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency			Per Industry	Existing	0.00	30	$0.00	4.0%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Improved Controls - HVAC			Per Industry	Existing	0.00	10	$0.00	34%	100%	.	0.00	0.00
Wyoming	Water	Hvac	Recommissioning / Facility Energy Management			Per Industry	Existing	0.00	10	$0.00	75%	100%	.	0.00	0.00
Wyoming	Water	Lighting	Efficient Metal Halide (High Bay)			Per Industry	Existing	8,361	15	$12,751	0.0%	100%	$0.24	0.00	0.00
Wyoming	Water	Lighting	Facility Energy Management			Per Industry	Existing	89,353	2	$1,870	75%	100%	$0.01	71	71
Wyoming	Water	Lighting	Induction (High Bay)			Per Industry	Existing	72,346	20	$47,630	0.0%	100%	$3.75	0.00	0.00
Wyoming	Water	Lighting	LED (High Bay)			Per Industry	Existing	97,228	20	$46,864	2.1%	100%	$1.72	20	20
Wyoming	Water	Lighting	Lighting Controls			Per Industry	Existing	94,000	10	$14,555	28%	100%	$0.02	270	270
Wyoming	Water	Lighting	Linear Fluorescent (High Bay)			Per Industry	Existing	8,611	15	$13,715	40%	100%	$0.36	433	433
Wyoming	Water	Lighting	Metal Halide (High Bay)			Per Industry	Existing	64,846	15	$77,829	0.0%	100%	$0.25	0.00	0.00
Wyoming	Water	Lighting	Screw Base CFL			Per Industry	Existing	91,669	4	$80,479	10%	100%	$0.01	436	436
Wyoming	Water	Lighting	Screw Base EISA Backstop Incandescent			Per Industry	Existing	5,616	1	$63,373	0.0%	100%	$0.00	0.00	0.00
Wyoming	Water	Lighting	Screw Base EISA Compliant Incandescent			Per Industry	Existing	39,006	1	$55,641	0.0%	100%	$0.00	0.00	0.00
Wyoming	Water	Lighting	Screw Base LED			Per Industry	Existing	23,721	12	$59,004	1.8%	100%	$0.02	77	77
Wyoming	Water	Lighting	T5 Linear Florescent			Per Industry	Existing	61,371	13	$63,128	11%	100%	$0.49	177	177
Wyoming	Water	Lighting	T8 High Performance Linear Florescent			Per Industry	Existing	81,449	13	$30,004	34%	100%	$0.10	429	429
Wyoming	Water	Lighting	T8 Linear Florescent			Per Industry	Existing	11,707	13	$59,180	0.0%	100%	$0.12	0.00	0.00
Wyoming	Water	Lighting	T8 Reduced Wattage Linear Florescent			Per Industry	Existing	22,220	13	$27,576	0.0%	100%	$0.13	0.00	0.00
Wyoming	Water	Motors Other	Facility Energy Management			Per Industry	Existing	65,576	2	$9,744	75%	100%	$0.01	374	374
Wyoming	Water	Motors Other	High Efficiency Motors			Per Industry	Existing	75,245	15	$63,367	75%	100%	$0.05	301	301
Wyoming	Water	Motors Other	Improved Controls - Motors			Per Industry	Existing	78,182	10	$90,964	34%	100%	$0.02	317	317
Wyoming	Water	Motors Other	Motors Other			Per Industry	Existing	644	15	$3,659	90%	100%	$0.00	193	193
Wyoming	Water	Motors Other	Motors: Rewind 101-200 HP			Per Industry	Existing	39,970	10	$31,942	6.7%	100%	$0.03	10	10
Wyoming	Water	Motors Other	Motors: Rewind 20-50 HP			Per Industry	Existing	60,373	11.2	$93,874	4.7%	100%	$0.05	13	13
Wyoming	Water	Motors Other	Motors: Rewind 201-500 HP			Per Industry	Existing	38,408	8	$20,078	4.0%	100%	$0.03	5	5
Wyoming	Water	Motors Other	Motors: Rewind 500+ HP			Per Industry	Existing	40,954	8	$14,336	4.0%	100%	$0.02	6	6
Wyoming	Water	Motors Other	Motors: Rewind 51-100 HP			Per Industry	Existing	51,929	9	$46,337	7.1%	100%	$0.05	11	11
Wyoming	Water	Motors Other	Switch from Belt drive to Direct Drive			Per Industry	Existing	96,634	12	$5,747	11%	100%	$0.03	213	213
Wyoming	Water	Motors Other	Synchronous Belts			Per Industry	Existing	83,053	10	$60,553	21%	100%	$0.03	63	63
Wyoming	Water	Other	Bldg Improvements			Per Industry	Existing	51,827	15	$74,428	35%	100%	$0.02	2,794	2,794
Wyoming	Water	Other	Facility Energy Management			Per Industry	Existing	72,499	2	$14,075	75%	100%	$0.01	540	540
Wyoming	Water	Other	Transformers			Per Industry	Existing	84,444	30	$16,696	20%	100%	$0.02	125	125

Table C-2.3. Industrial Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Wyoming	Water	Process Aircomp	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Water	Process Cool	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Water	Process Other	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Water	Process Refrig	Facility Energy Management			Per Industry	Existing	0.00	2	$0.00	75%	100%	.	0.00	0.00
Wyoming	Water	Pumps	Facility Energy Management			Per Industry	Existing	9,787	2	$62,994	60%	100%	$0.01	1,920	1,920
Wyoming	Water	Pumps	High Efficiency Motors			Per Industry	Existing	25,827	15	$56,110	75%	100%	$0.05	1,949	1,949
Wyoming	Water	Pumps	Motor rewinds			Per Industry	Existing	72,347	9	$32,475	5.3%	100%	$0.04	55	55
Wyoming	Water	Pumps	Pump Equipment Upgrade			Per Industry	Existing	96,196	12	$87,024	34%	100%	$0.02	11,756	11,756
Wyoming	Water	Pumps	Pump System Optimization			Per Industry	Existing	77,034	12	$83,541	15%	100%	$0.04	3,270	3,270
Wyoming	Water	Pumps	Synchronous Belts			Per Industry	Existing	29,838	10	$91,458	21%	100%	$0.03	411	411

Table C-2.4. Irrigation Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Irrigation	Pumps	High Efficiency Motors			Per Industry	Existing	62,957	15	$49,842	75%	100%	$0.05	920	920
California	Irrigation	Pumps	Irrigation System Improvements			Per Industry	Existing	9,040	5	$63,469	85%	100%	$0.08	5,623	5,623
California	Irrigation	Pumps	SIS			Per Industry	Existing	83,475	7	$62,119	77%	100%	$0.15	4,744	4,744
Idaho	Irrigation	Pumps	High Efficiency Motors			Per Industry	Existing	13,853	15	$84,167	75%	100%	$0.05	5,264	5,264
Idaho	Irrigation	Pumps	Irrigation System Improvements			Per Industry	Existing	31,520	5	$7,876	85%	100%	$0.06	32,164	32,164
Idaho	Irrigation	Pumps	SIS			Per Industry	Existing	67,050	7	$52,322	77%	100%	$0.12	27,138	27,138
Utah	Irrigation	Pumps	High Efficiency Motors			Per Industry	Existing	4,947	15	$90,556	75%	100%	$0.03	1,758	1,758
Utah	Irrigation	Pumps	Irrigation System Improvements			Per Industry	Existing	5,040	5	$89,362	85%	100%	$0.03	10,746	10,746
Utah	Irrigation	Pumps	SIS			Per Industry	Existing	60,975	7	$35,219	77%	100%	$0.06	9,067	9,067
Washington	Irrigation	Pumps	High Efficiency Motors			Per Industry	Existing	19,930	15	$22,935	75%	100%	$0.05	1,496	1,496
Washington	Irrigation	Pumps	Irrigation System Improvements			Per Industry	Existing	29,280	5	$99,335	85%	100%	$0.06	9,141	9,141
Washington	Irrigation	Pumps	SIS			Per Industry	Existing	14,950	7	$558	77%	100%	$0.12	7,713	7,713
Wyoming	Irrigation	Pumps	High Efficiency Motors			Per Industry	Existing	68,430	15	$16,864	75%	100%	$0.05	199	199
Wyoming	Irrigation	Pumps	Irrigation System Improvements			Per Industry	Existing	47,200	5	$81,080	85%	100%	$0.08	1,219	1,219
Wyoming	Irrigation	Pumps	SIS			Per Industry	Existing	56,750	7	$39,670	77%	100%	$0.16	1,029	1,029

Table C-2.5. Street Lighting Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
California	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.11	183	183
California	Company HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Company owned	N/A	Per Installation	Existing	14	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.11	2	2
California	Company HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Company owned	N/A	Per Installation	New	14	6	$0.00	100%	N/A	$0.00	0.00	0.00
California	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.11	48	48
California	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.11	0.60	0.60
California	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	Existing	529	17	$352	100%	N/A	$0.07	0.49	0.49
California	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	New	529	17	$352	100%	N/A	$0.07	0.00	0.00
California	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.08	2	2
California	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.08	0.02	0.02
California	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.11	280	280
California	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.11	3	3
California	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.11	78	78
California	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.11	0.99	0.99
California	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	Existing	536	17	$352	100%	N/A	$0.07	160	160
California	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	New	536	17	$352	100%	N/A	$0.07	2	2
California	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.08	2	2
California	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.08	0.02	0.02
Idaho	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$-0.04	17	17
Idaho	Company HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Company owned	N/A	Per Installation	Existing	15	6	$0.00	100%	N/A	$-1.98	0.00	0.00
Idaho	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$-0.04	6	6
Idaho	Company HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Company owned	N/A	Per Installation	New	15	6	$0.00	100%	N/A	$-1.98	0.00	0.00
Idaho	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$-0.02	0.68	0.68
Idaho	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$-0.02	0.23	0.23
Idaho	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	Existing	529	17	$352	100%	N/A	$0.01	5	5
Idaho	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	New	529	17	$352	100%	N/A	$0.01	2	2
Idaho	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.04	3	3
Idaho	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.04	1	1
Idaho	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$-0.04	571	571
Idaho	Customer HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Customer owned	N/A	Per Installation	Existing	59	6	$0.00	100%	N/A	$-0.51	0.00	0.00
Idaho	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$-0.04	195	195

Table C-2.5. Street Lighting Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Idaho	Customer HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Customer owned	N/A	Per Installation	New	59	6	$0.00	100%	N/A	$-0.51	0.00	0.00
Idaho	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$-0.02	52	52
Idaho	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$-0.02	17	17
Idaho	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	Existing	535	17	$352	100%	N/A	$0.01	227	227
Idaho	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	New	535	17	$352	100%	N/A	$0.01	77	77
Idaho	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.04	162	162
Idaho	Customer HPS400	Street Lighting	Stock - HPS 400W	Stock - HPS 400W, Customer owned	N/A	Per Installation	Existing	14	6	$0.00	100%	N/A	$-2.11	0.00	0.00
Idaho	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.04	55	55
Idaho	Customer HPS400	Street Lighting	Stock - HPS 400W	Stock - HPS 400W, Customer owned	N/A	Per Installation	New	14	6	$0.00	100%	N/A	$-2.11	0.00	0.00
Utah	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.11	3,617	3,617
Utah	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.11	0.00	0.00
Utah	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.10	400	400
Utah	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.10	0.00	0.00
Utah	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	Existing	530	17	$352	100%	N/A	$0.07	1,169	1,169
Utah	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	New	530	17	$352	100%	N/A	$0.07	0.00	0.00
Utah	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.07	676	676
Utah	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.07	0.00	0.00
Utah	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.08	5,395	5,395
Utah	Customer HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Customer owned	N/A	Per Installation	Existing	66	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.08	0.00	0.00
Utah	Customer HPS100	Street Lighting	Stock - HPS 100W	Stock - HPS 100W, Customer owned	N/A	Per Installation	New	66	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.08	3,679	3,679
Utah	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.08	0.00	0.00
Utah	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	Existing	530	17	$352	100%	N/A	$0.05	3,378	3,378
Utah	Customer HPS250	Street Lighting	Stock - HPS 250W	Stock - HPS 250W, Customer owned	N/A	Per Installation	Existing	12	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	New	530	17	$352	100%	N/A	$0.05	0.00	0.00
Utah	Customer HPS250	Street Lighting	Stock - HPS 250W	Stock - HPS 250W, Customer owned	N/A	Per Installation	New	12	6	$0.00	100%	N/A	$0.00	0.00	0.00
Utah	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.06	6,386	6,386
Utah	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.06	0.00	0.00
Washington	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$-0.04	475	475
Washington	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$-0.04	7	7

Table C-2.5. Street Lighting Measure Details

State	Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (kWh)	Measure Life	Incremental Cost per Unit	Percent of Installations Technically Feasible	Percent of Installations Incomplete	Levelized Cost ($ per kWh)	2032 Cumulative Achievable Technical Potential (MWh)	20-Year Incremental Achievable Technical Potential (MWh)
Washington	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$-0.02	363	363
Washington	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$-0.02	5	5
Washington	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	Existing	529	17	$352	100%	N/A	$0.01	61	61
Washington	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	New	529	17	$352	100%	N/A	$0.01	1	1
Washington	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.04	122	122
Washington	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.04	2	2
Washington	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$-0.04	502	502
Washington	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$-0.04	8	8
Washington	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$-0.02	210	210
Washington	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$-0.02	3	3
Washington	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	Existing	529	17	$352	100%	N/A	$0.01	455	455
Washington	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	New	529	17	$352	100%	N/A	$0.01	7	7
Washington	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.04	103	103
Washington	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.04	1	1
Wyoming	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.12	2,000	2,000
Wyoming	Company HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Company owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.12	0.00	0.00
Wyoming	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.11	533	533
Wyoming	Company HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Company owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.11	0.00	0.00
Wyoming	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	Existing	529	17	$352	100%	N/A	$0.07	398	398
Wyoming	Company HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Company owned	Standard - HPS 250W	Per Installation	New	529	17	$352	100%	N/A	$0.07	0.00	0.00
Wyoming	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.08	304	304
Wyoming	Company HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Company owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.08	0.00	0.00
Wyoming	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	Existing	195	17	$208	100%	N/A	$0.12	20	20
Wyoming	Customer HPS100	Street Lighting	LED 100W Equivalent	LED 100W Equivalent, Customer owned	Standard - HPS 100W	Per Installation	New	195	17	$208	100%	N/A	$0.12	0.00	0.00
Wyoming	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	Existing	245	17	$249	100%	N/A	$0.11	23	23
Wyoming	Customer HPS150	Street Lighting	LED 150W Equivalent	LED 150W Equivalent, Customer owned	Standard - HPS 150W	Per Installation	New	245	17	$249	100%	N/A	$0.11	0.00	0.00
Wyoming	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	Existing	558	17	$352	100%	N/A	$0.07	264	264
Wyoming	Customer HPS250	Street Lighting	LED 250W Equivalent	LED 250W Equivalent, Customer owned	Standard - HPS 250W	Per Installation	New	558	17	$352	100%	N/A	$0.07	0.00	0.00
Wyoming	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	Existing	833	17	$614	100%	N/A	$0.08	29	29
Wyoming	Customer HPS400	Street Lighting	LED 400W Equivalent	LED 400W Equivalent, Customer owned	Standard - HPS 400W	Per Installation	New	833	17	$614	100%	N/A	$0.08	0.00	0.00

APPENDIX C-3A. BASELINE FORECASTS

Appendix C-3A presents baseline load forecasts by state, sector, and segment, in aMW at generator. Special accounts were removed from industrial forecasts. These forecasts were informed by PacifiCorp's forecasts, however, they may differ due to treatment of codes and standards and econometric factors.

Figure C-3A.1. System Baseline Forecast 2012-2032, Overall

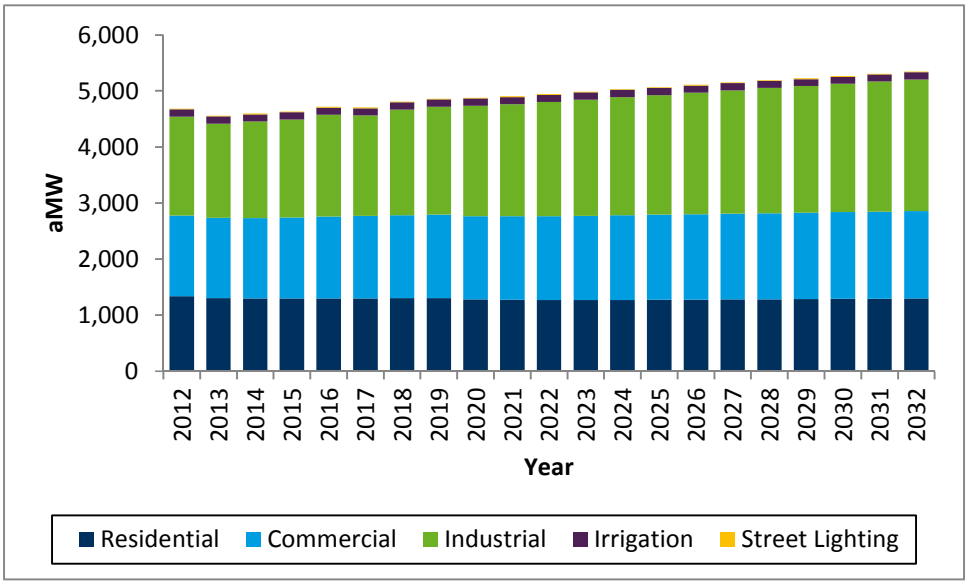


Figure C-3A.2. Baseline Forecast 2012-2032, California

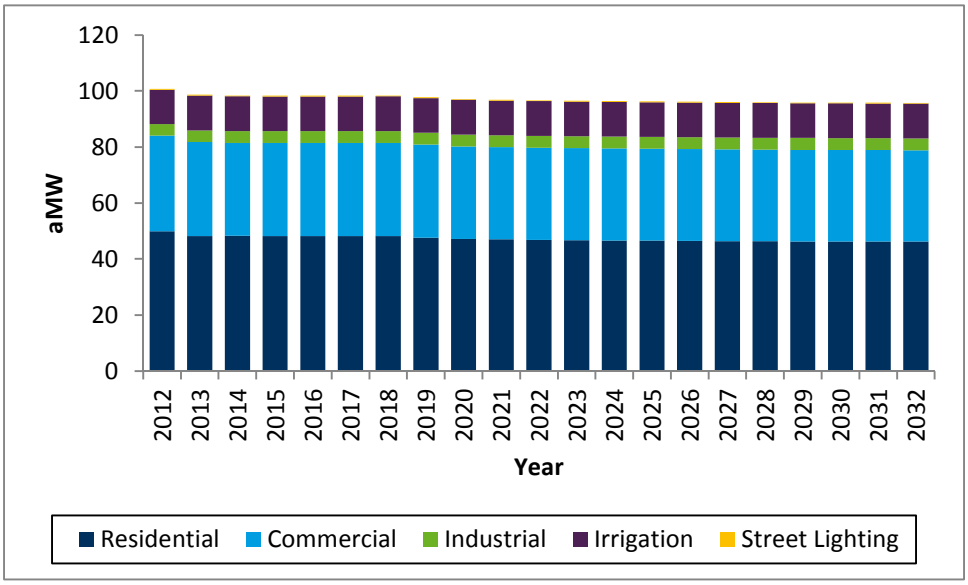


Figure C-3A.3. Baseline Forecast 2012-2032, Idaho

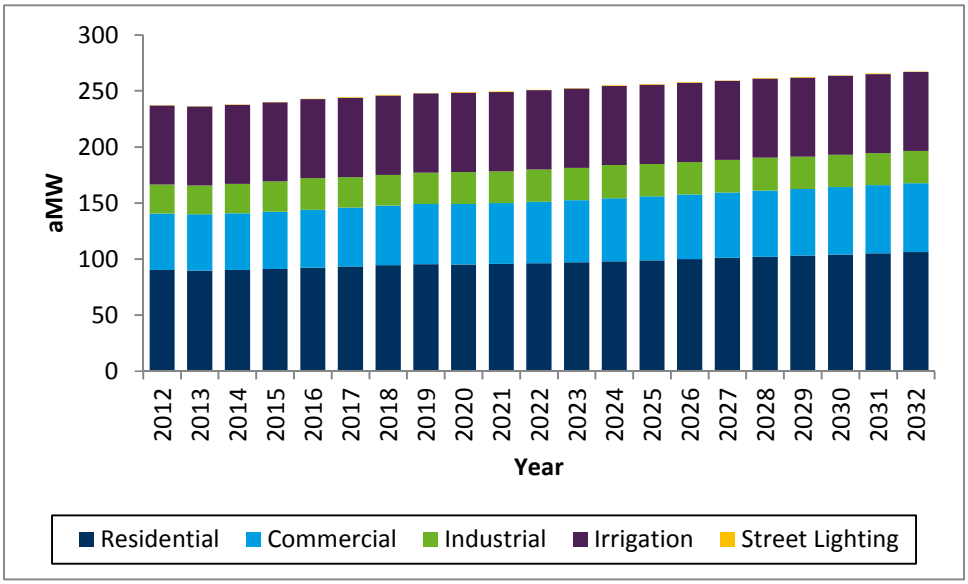


Figure C-3A.4. Baseline Forecast 2012-2032, Utah

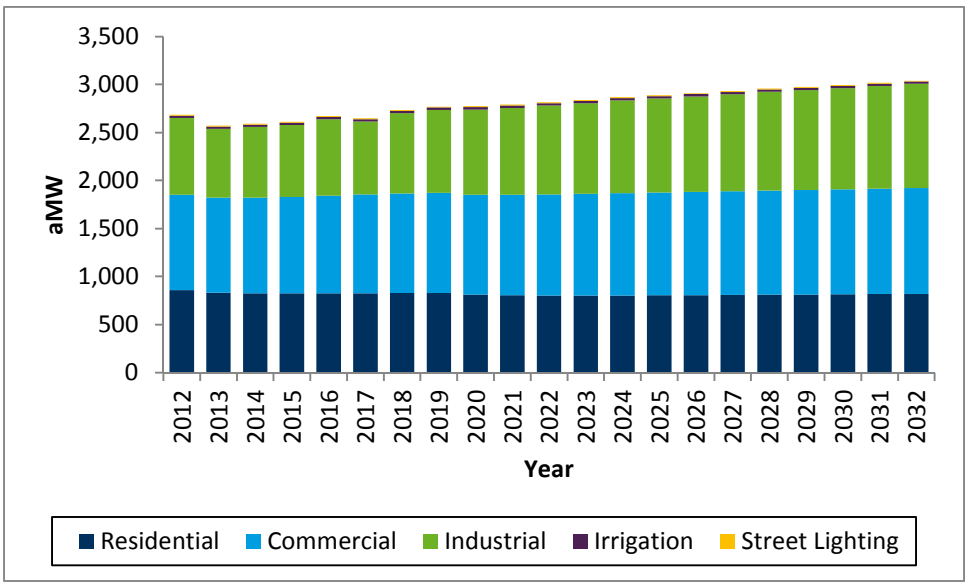


Figure C-3A.5. Baseline Forecast 2012-2032, Washington

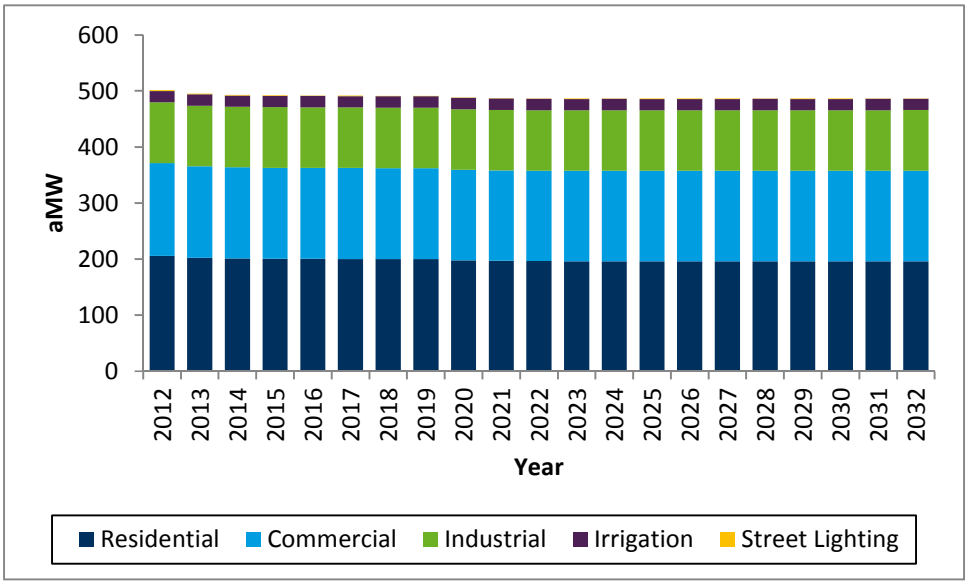


Figure C-3A.6. Baseline Forecast 2012-2032, Wyoming

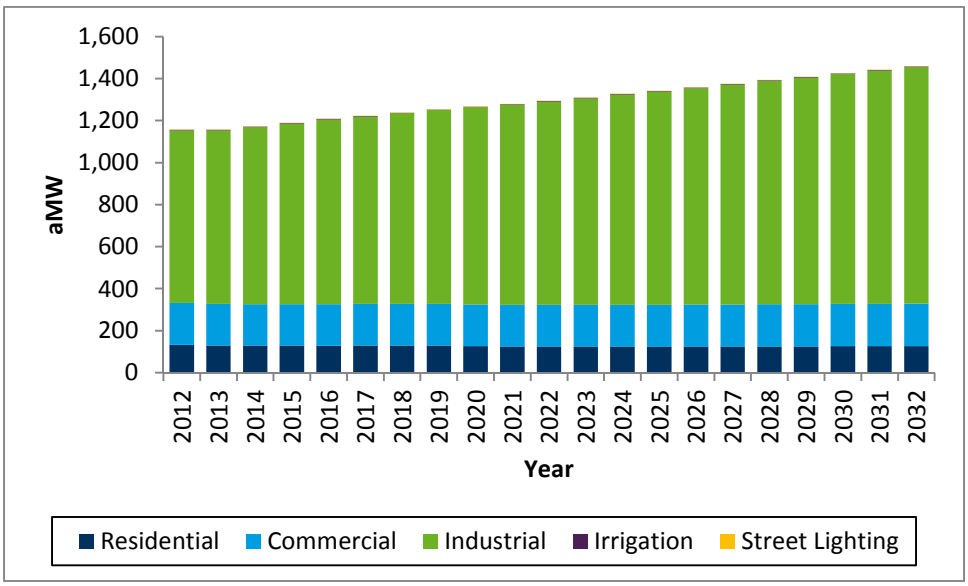


Figure C-3A.7. Residential Baseline Forecast 2012-2032, Overall

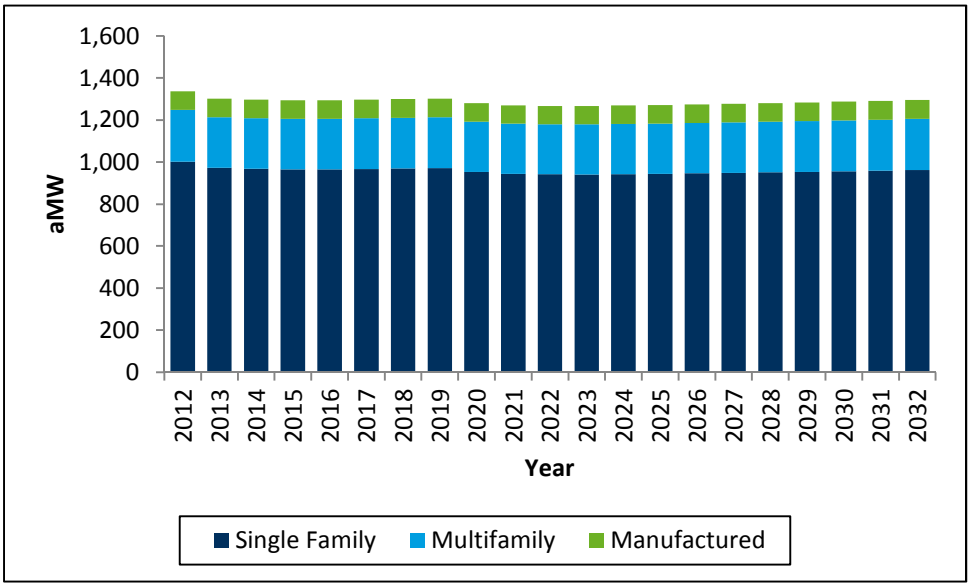


Figure C-3A.8. Residential Baseline Forecast 2012-2032, California

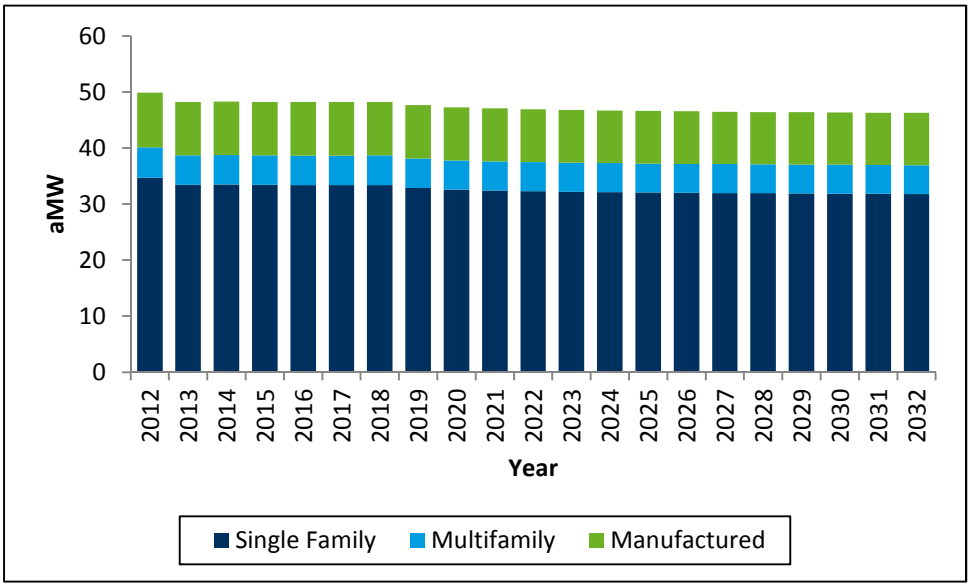


Figure C-3A.9. Residential Baseline Forecast 2012-2032, Idaho

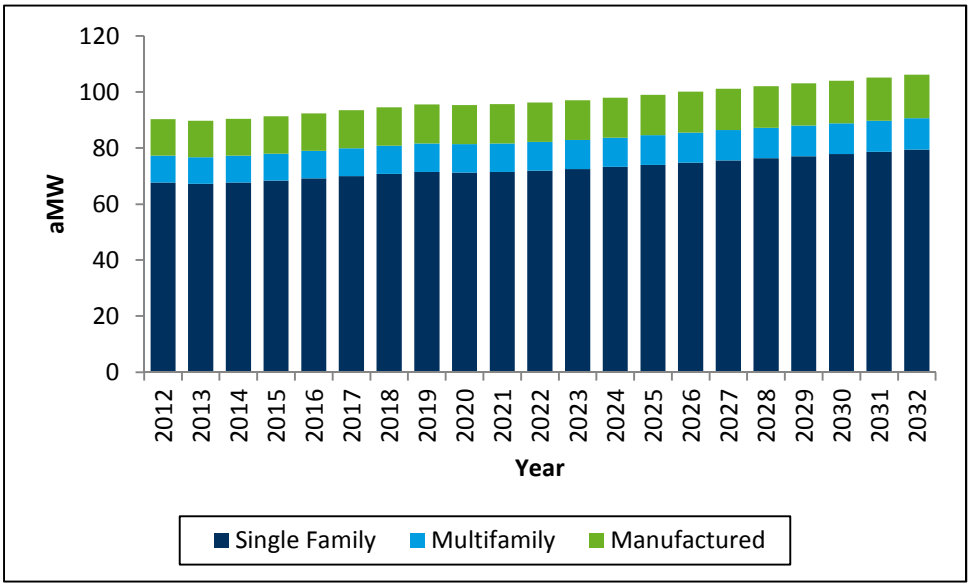


Figure C-3A.10. Residential Baseline Forecast 2012-2032, Utah

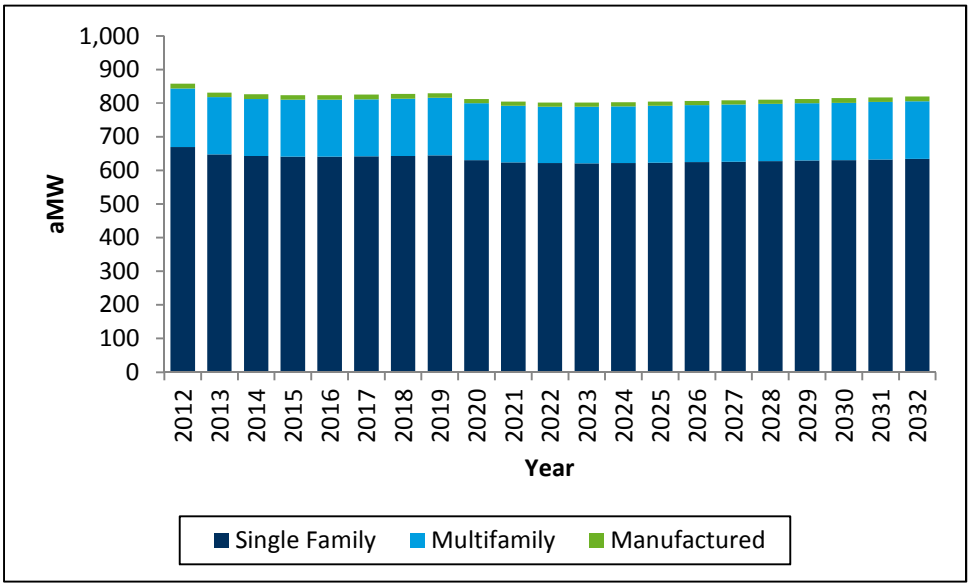


Figure C-3A.11. Residential Baseline Forecast 2012-2032, Washington

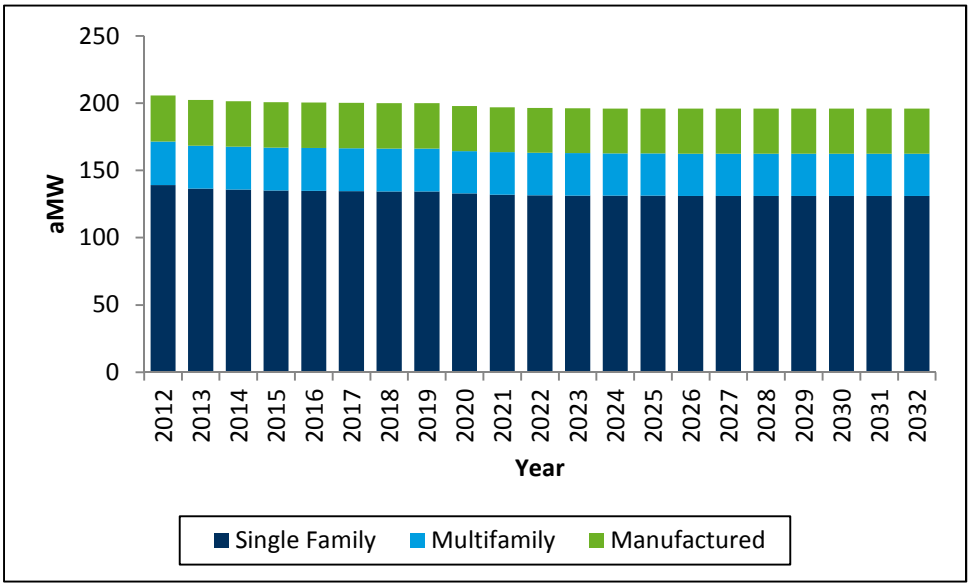


Figure C-3A.12 Residential Baseline Forecast 2012-2032, Wyoming

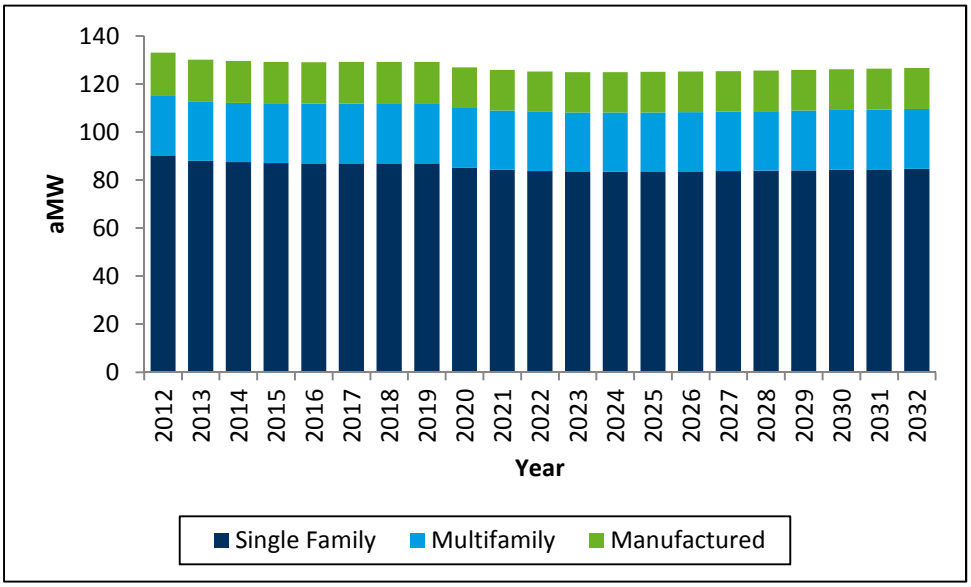


Figure C-3A.13. Commercial Baseline Forecast 2012-2032, Overall

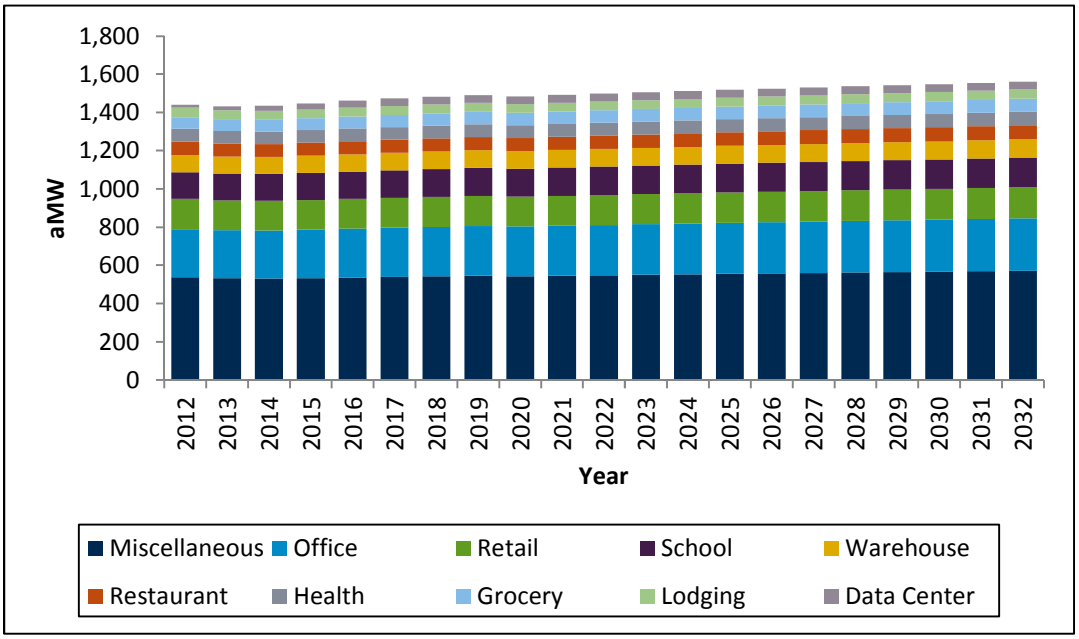


Figure C-3A.14. Commercial Baseline Forecast 2012-2032, California

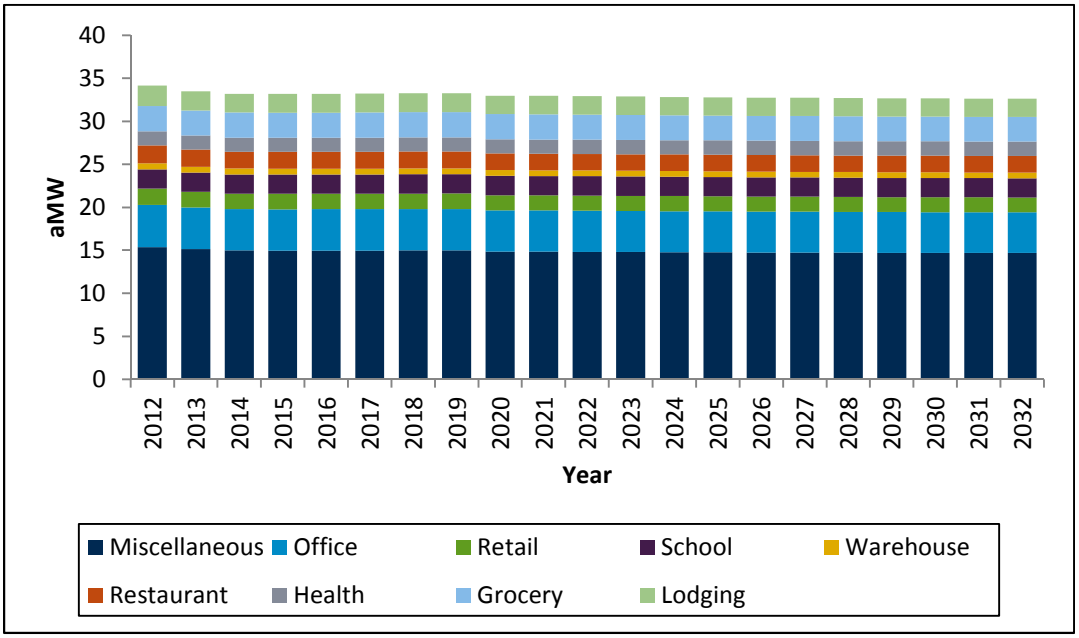


Figure C-3A.15. Commercial Baseline Forecast 2012-2032, Idaho

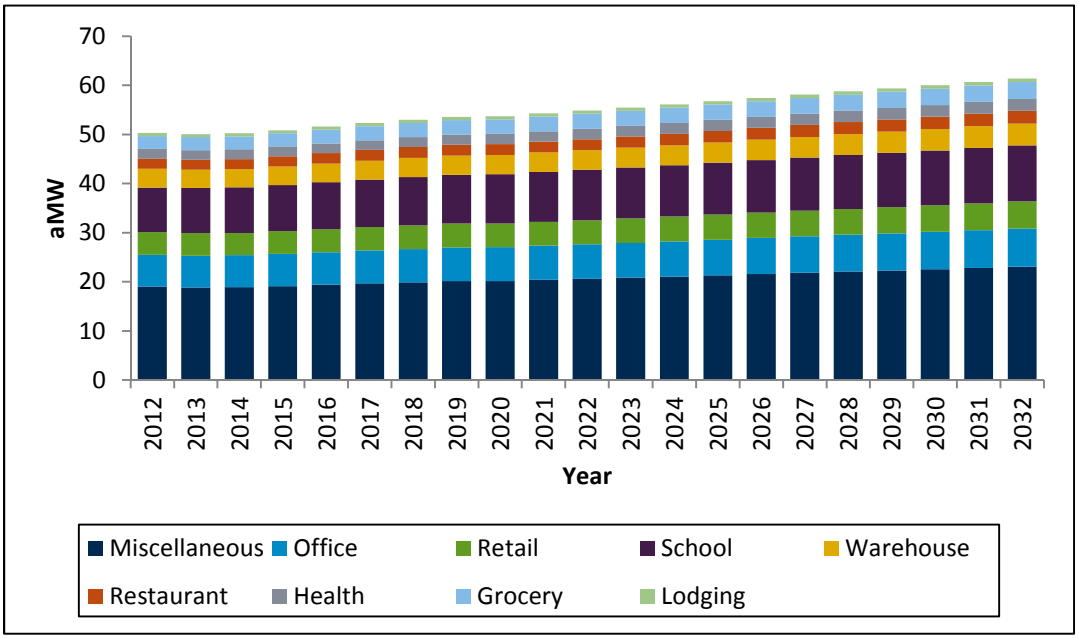


Figure C-3A.16. Commercial Baseline Forecast 2012-2032, Utah

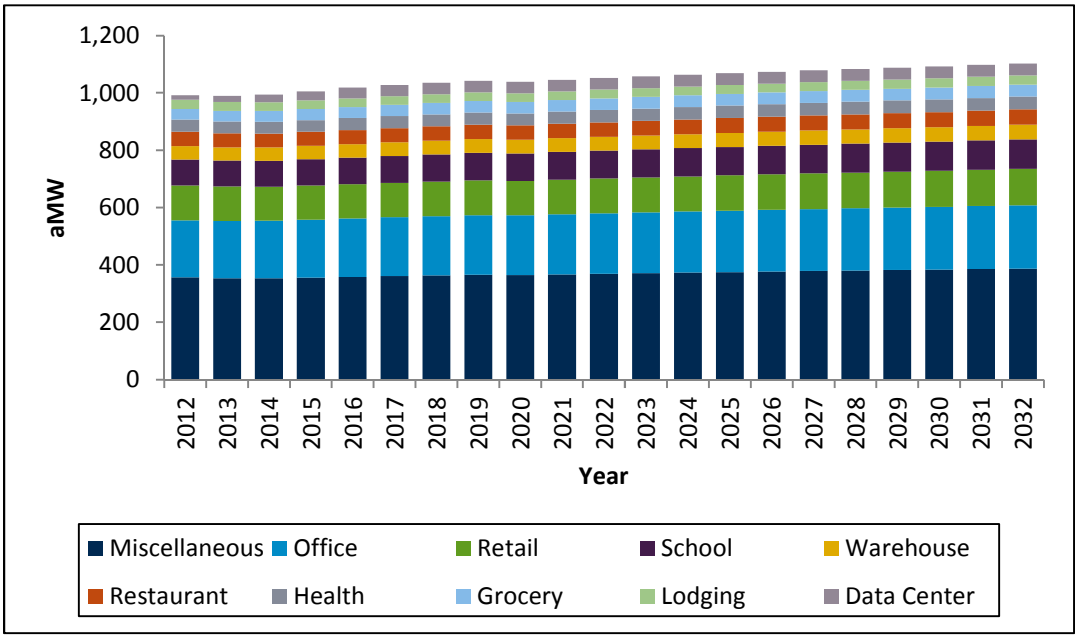


Figure C-3A.17. Commercial Baseline Forecast 2012-2032, Washington

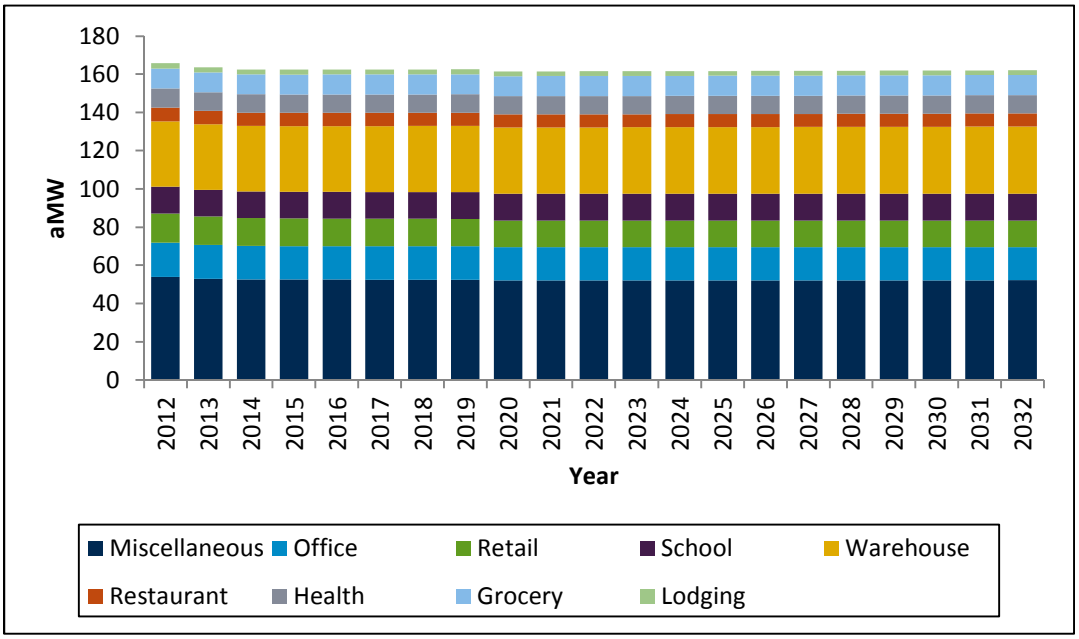


Figure C-3A.18. Commercial Baseline Forecast 2012-2032, Wyoming

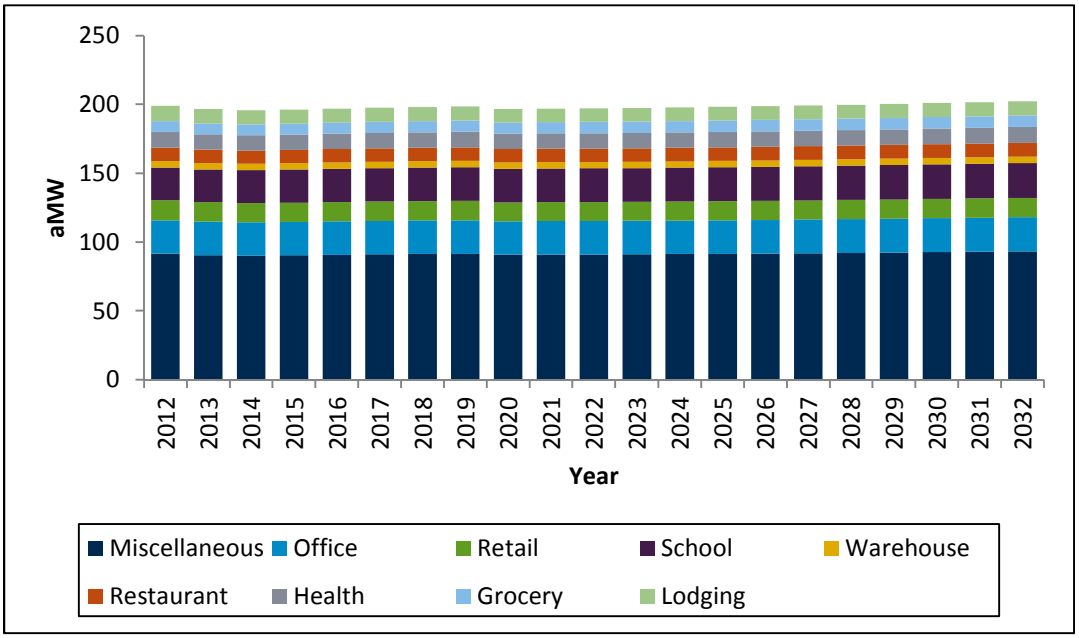


Figure C-3A.19. Industrial Baseline Forecast 2012-2032, Overall

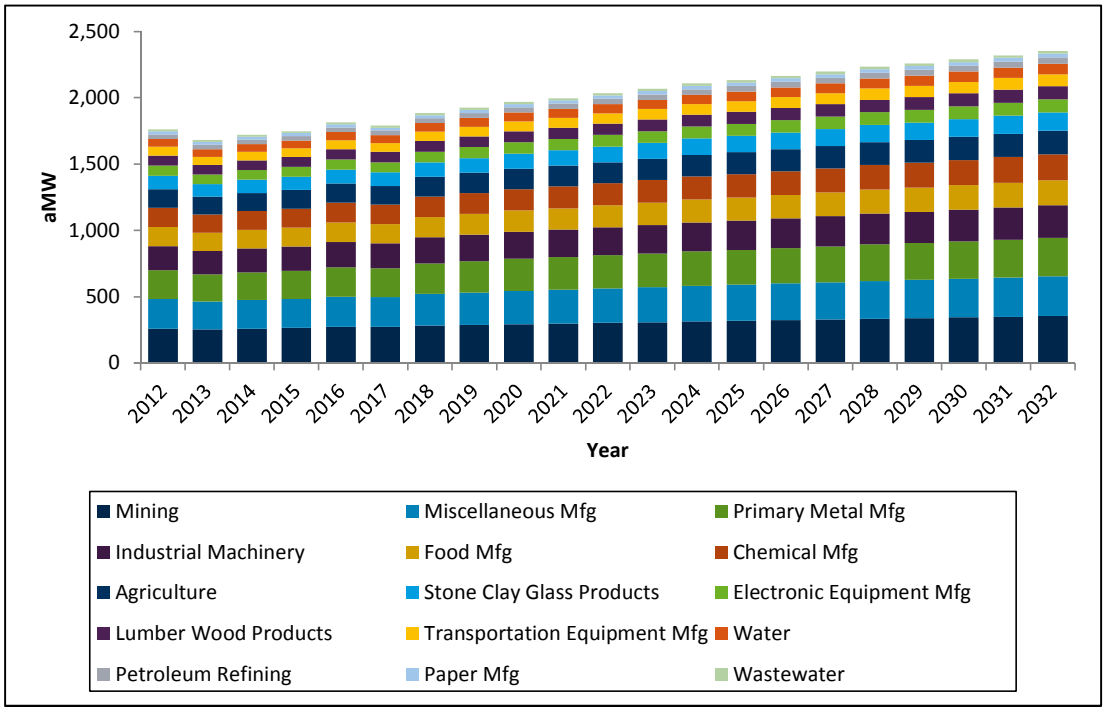


Figure C-3A.20. Industrial Baseline Forecast 2012-2032, California

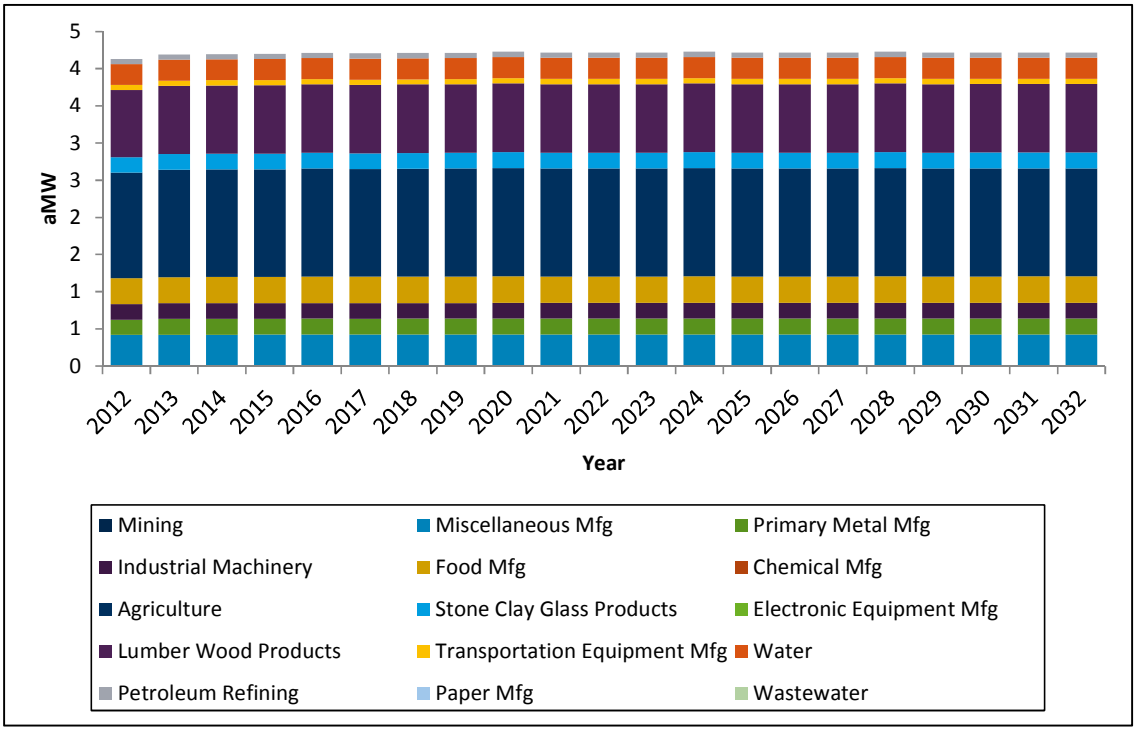


Figure C-3A.21. Industrial Baseline Forecast 2012-2032, Idaho

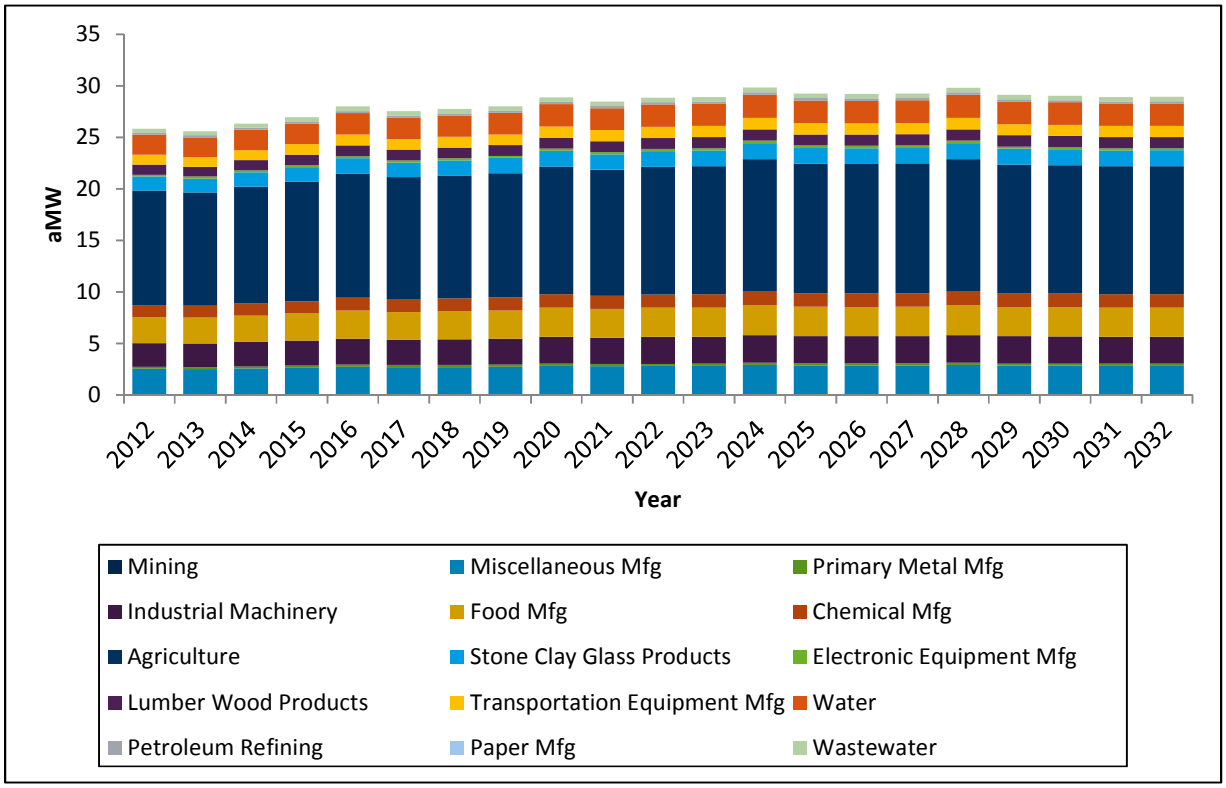


Figure C-3A.22. Industrial Baseline Forecast 2012-2032, Utah

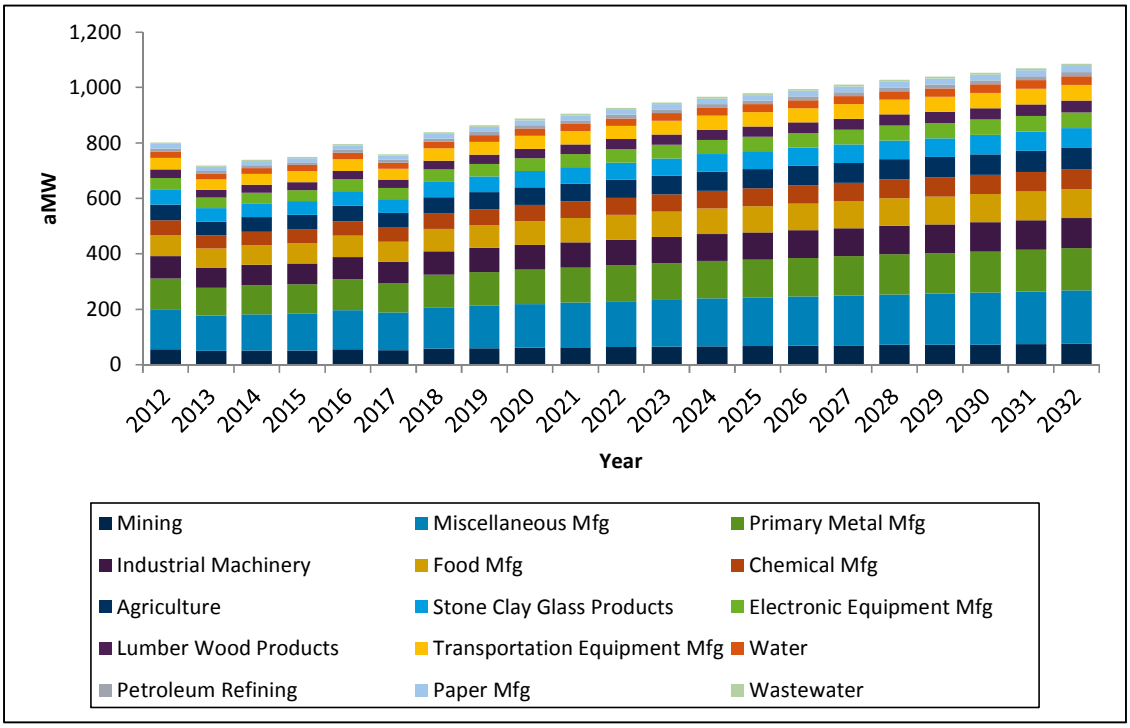


Figure C-3A.23. Industrial Baseline Forecast 2012-2032, Washington

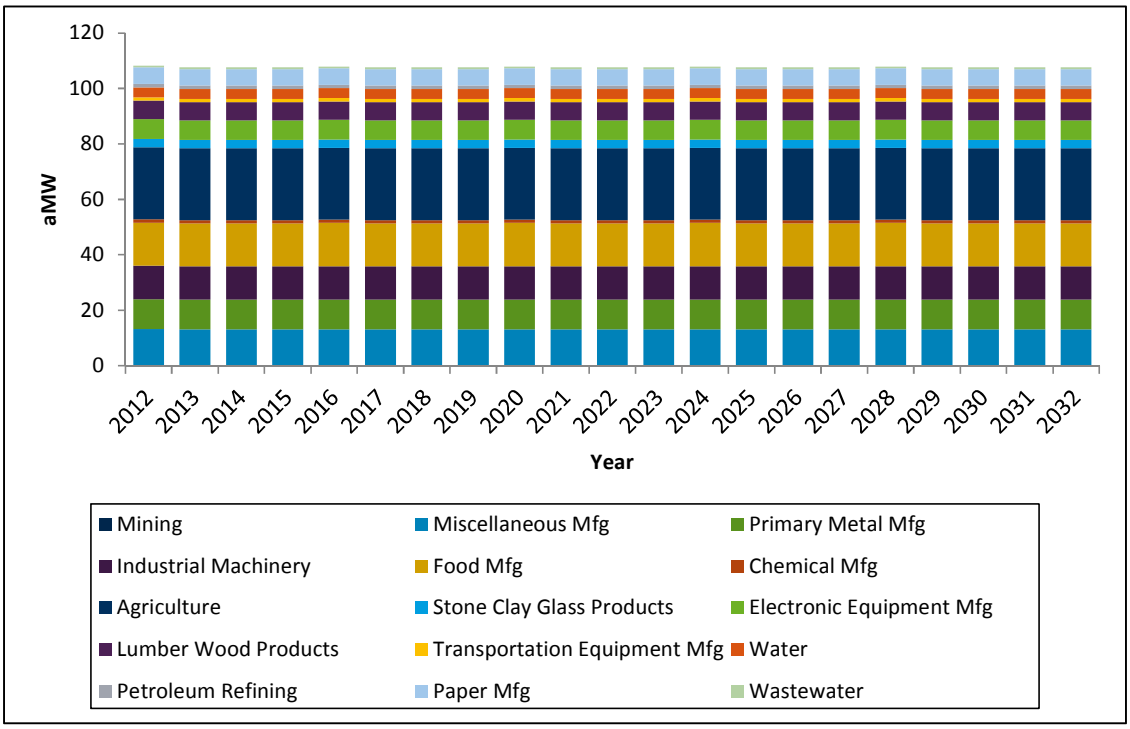


Figure C-3A.24. Industrial Baseline Forecast 2012-2032, Wyoming

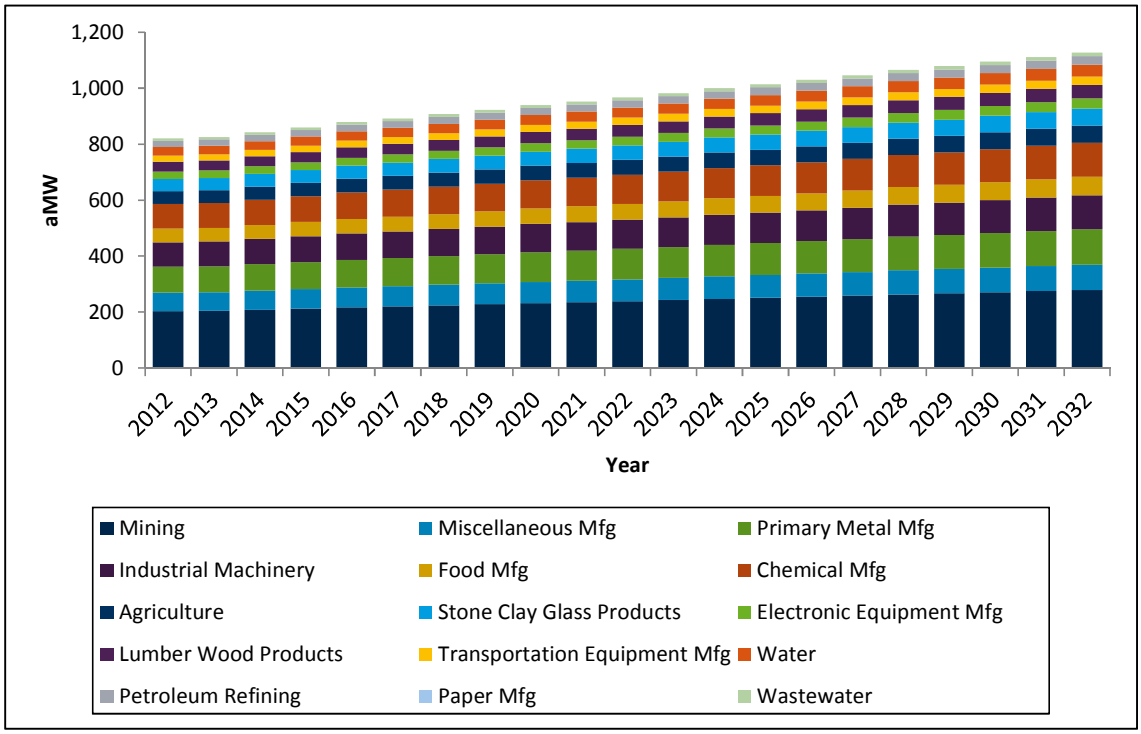


Figure C-3A.25. Irrigation Baseline Forecast 2012-2032, Overall

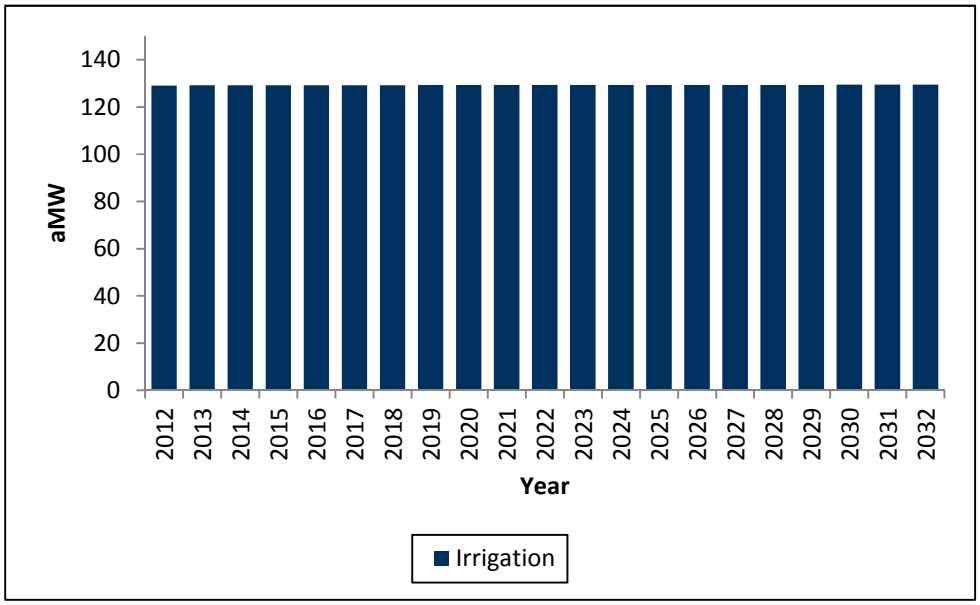


Figure C-3A.26. Irrigation Baseline Forecast 2012-2032, California

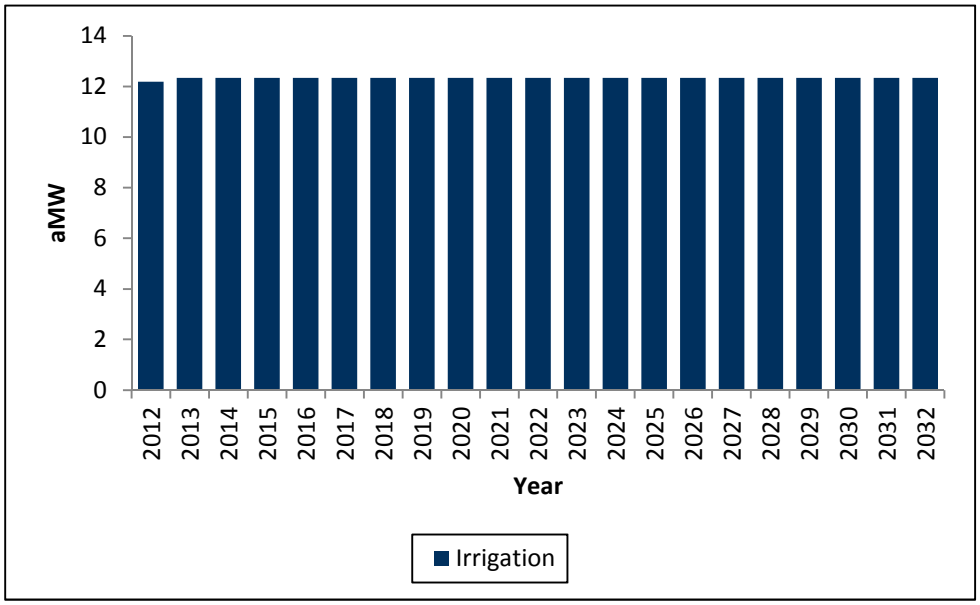


Figure C-3A.27. Irrigation Baseline Forecast 2012-2032, Idaho

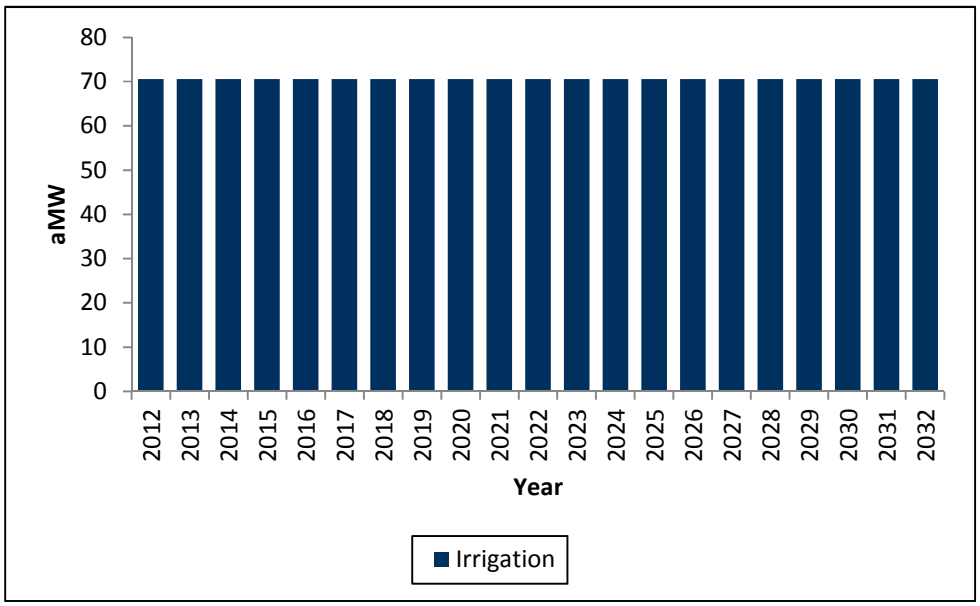


Figure C-3A.28. Irrigation Baseline Forecast 2012-2032, Utah

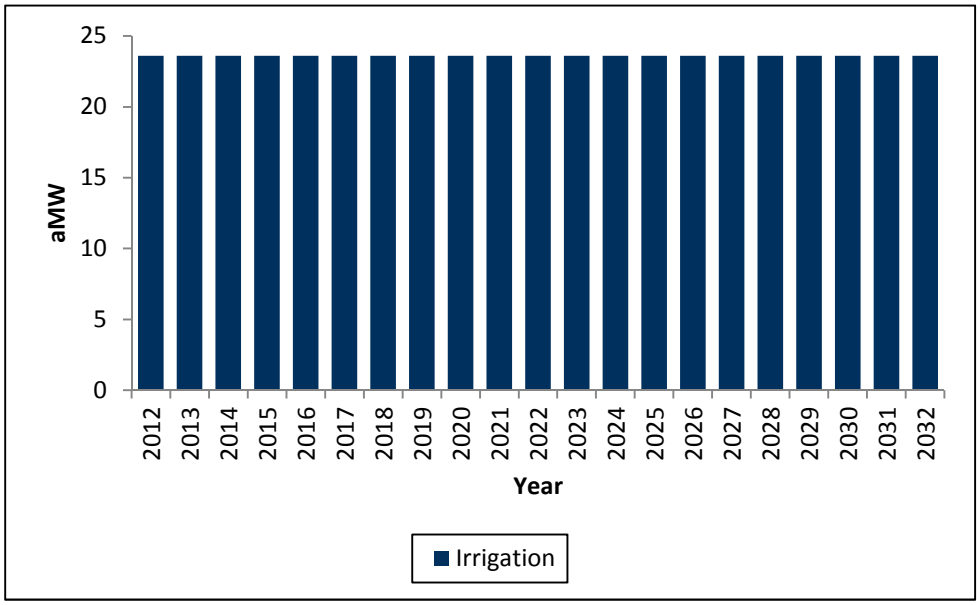


Figure C-3A.29. Irrigation Baseline Forecast 2012-2032, Washington

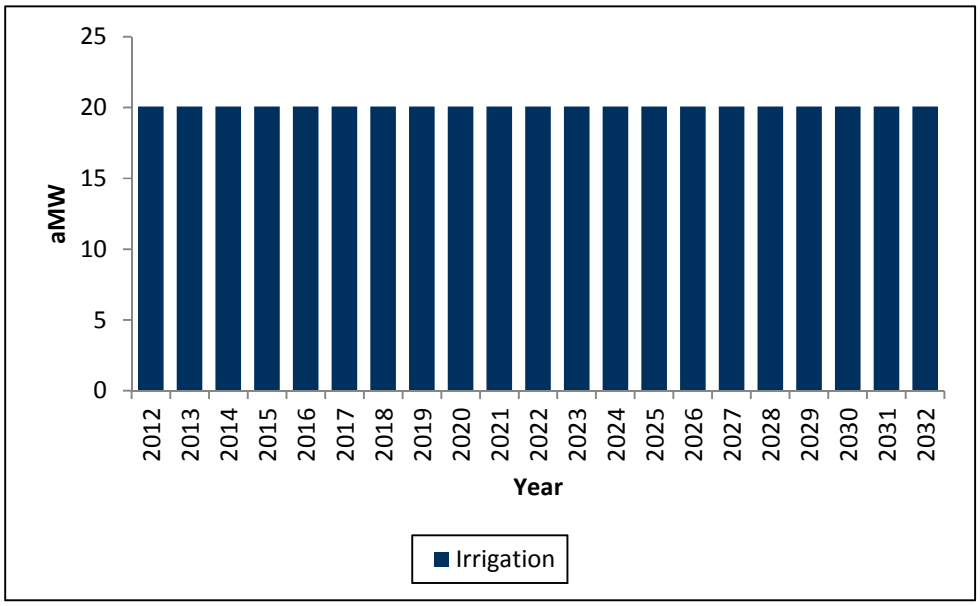


Figure C-3A.30. Irrigation Baseline Forecast 2012-2032, Wyoming

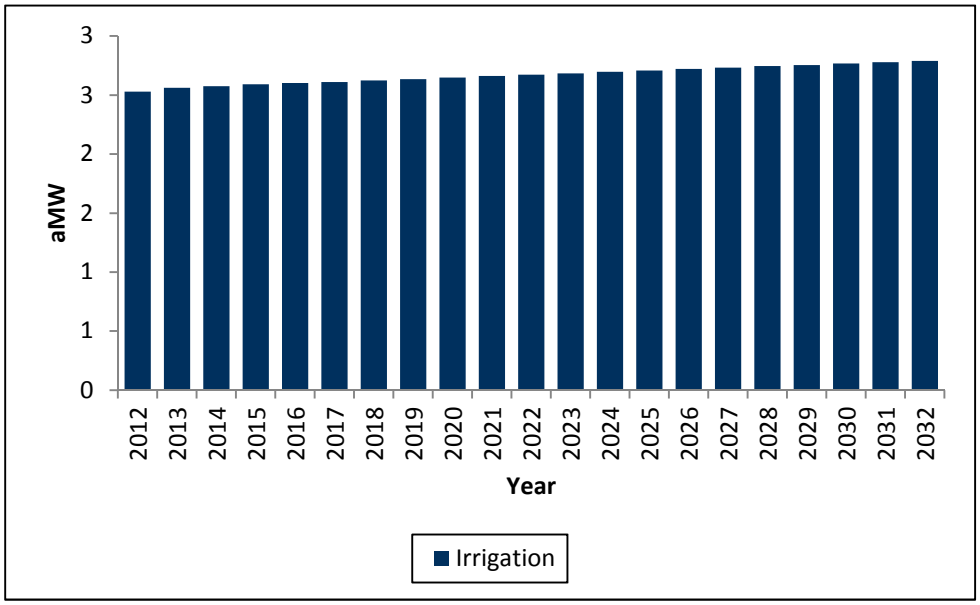


Figure C-3A.31. Street Lighting Baseline Forecast 2012-2032, Overall

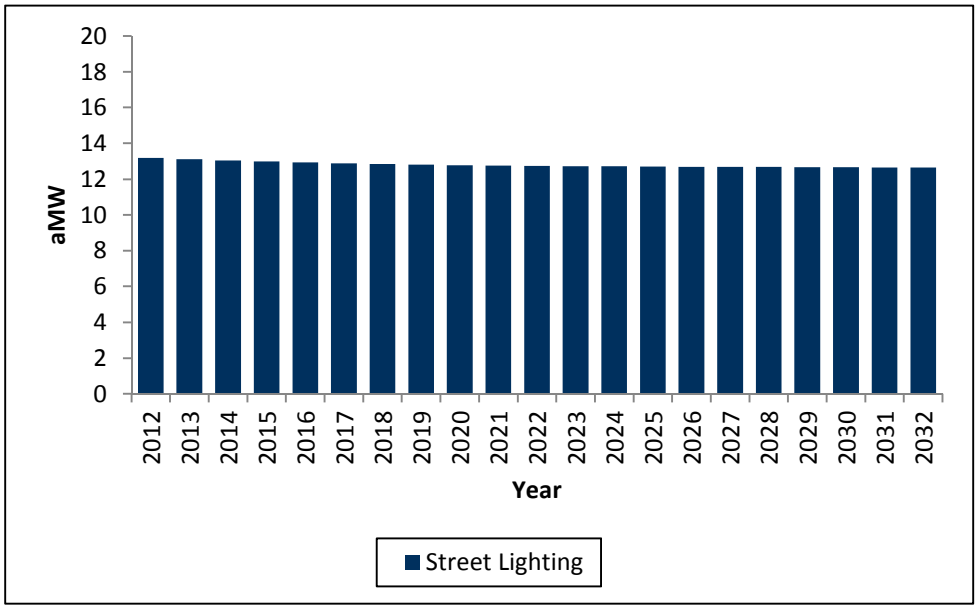


Figure C-3A.32. Street Lighting Baseline Forecast 2012-2032, California

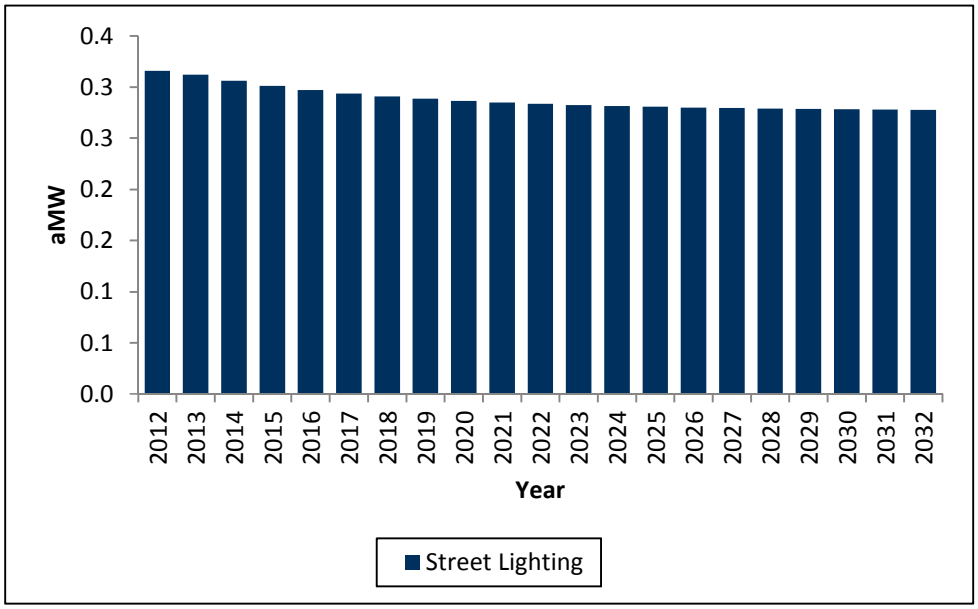


Figure C-3A.33. Street Lighting Baseline Forecast 2012-2032, Idaho

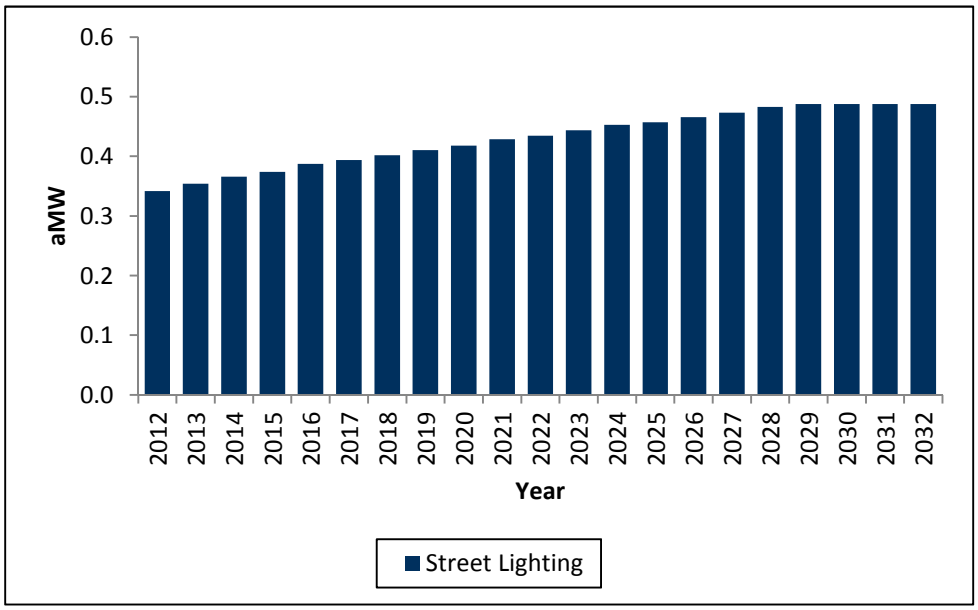


Figure C-3A.34. Street Lighting Baseline Forecast 2012-2032, Utah

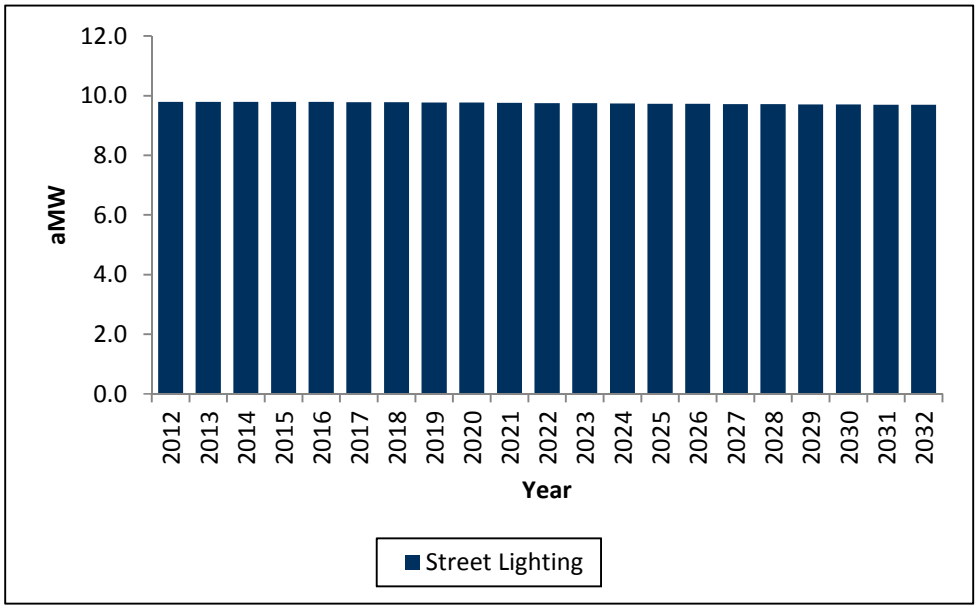


Figure C-3A.35. Street Lighting Baseline Forecast 2012-2032, Washington

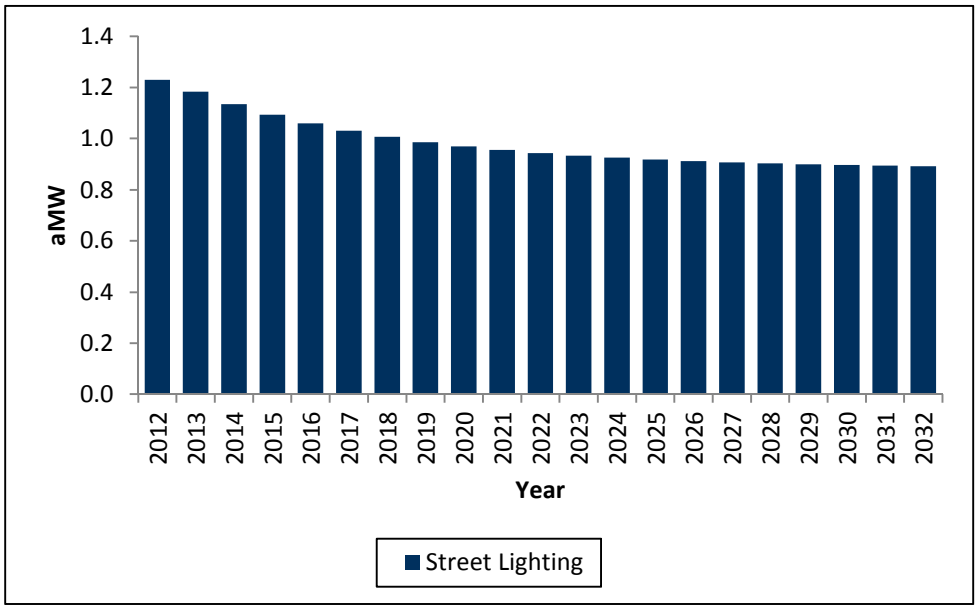
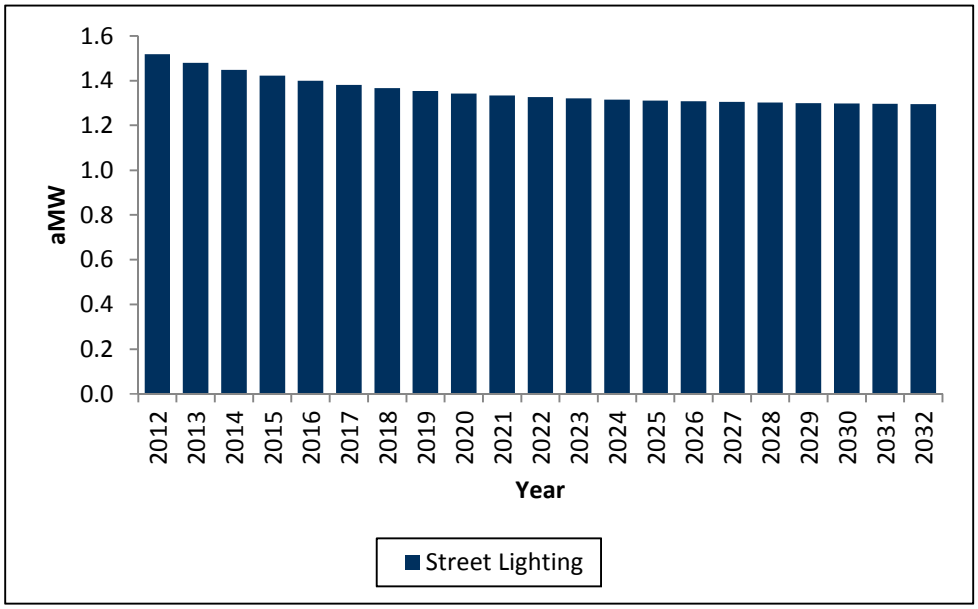


Figure C-3A.36. Street Lighting Baseline Forecast 2012-2032, Wyoming



APPENDIX C-3B. BASELINE FORECAST PIE CHARTS

Appendix C-3B presents baseline load forecasts in 2032 by state, sector, segment and end use, in aMW at generator. Special accounts were removed from industrial forecasts. These forecasts were informed by PacifiCorp's 2012 forecasts, however, values may differ due to treatment of codes and standards and econometric factors.

Figure C-3B.1. Baseline Sales 2032 - California: Residential by Segment

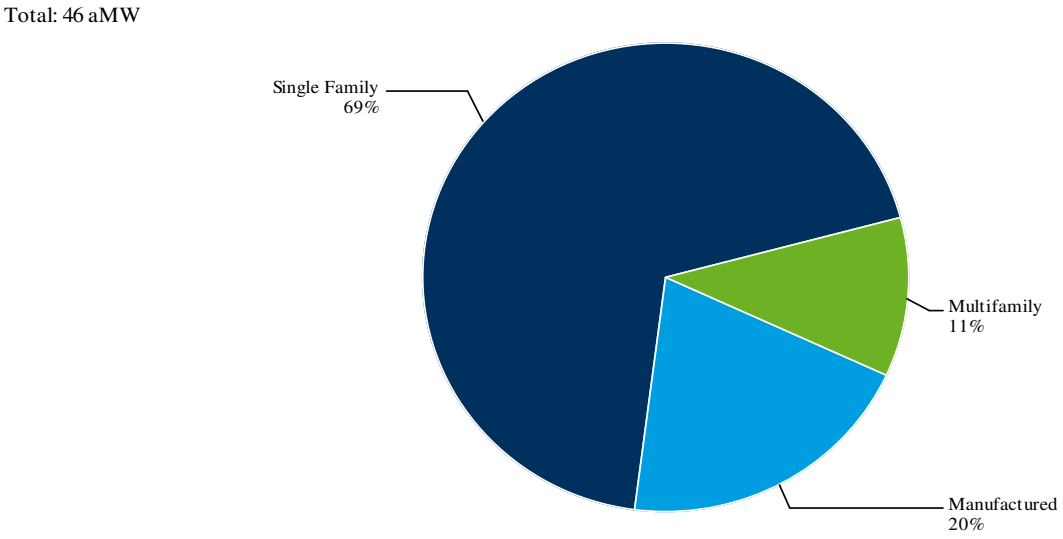


Figure C-3B.2. Baseline Sales 2032 - Idaho: Residential by Segment

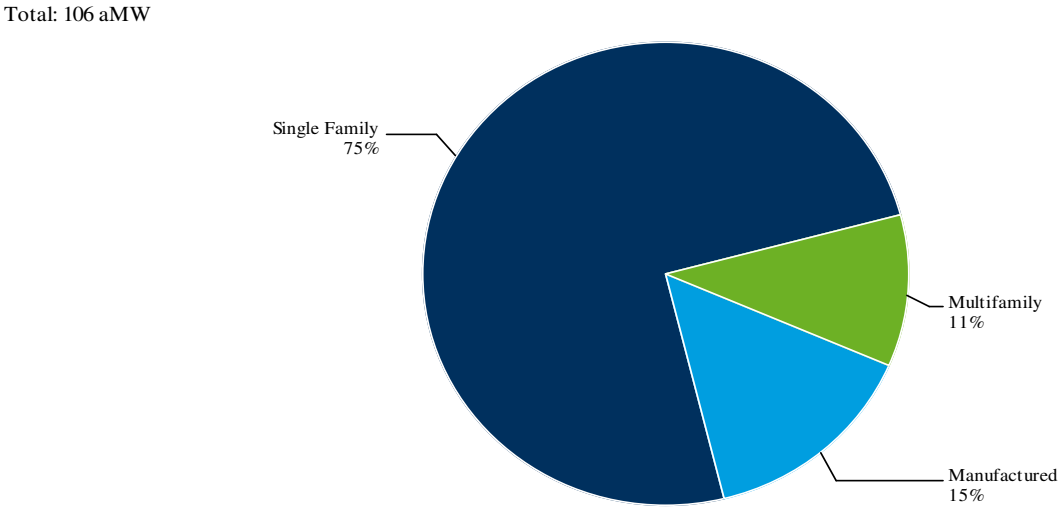


Figure C-3B.3. Baseline Sales 2032 - Utah: Residential by Segment

Total: 820 aMW

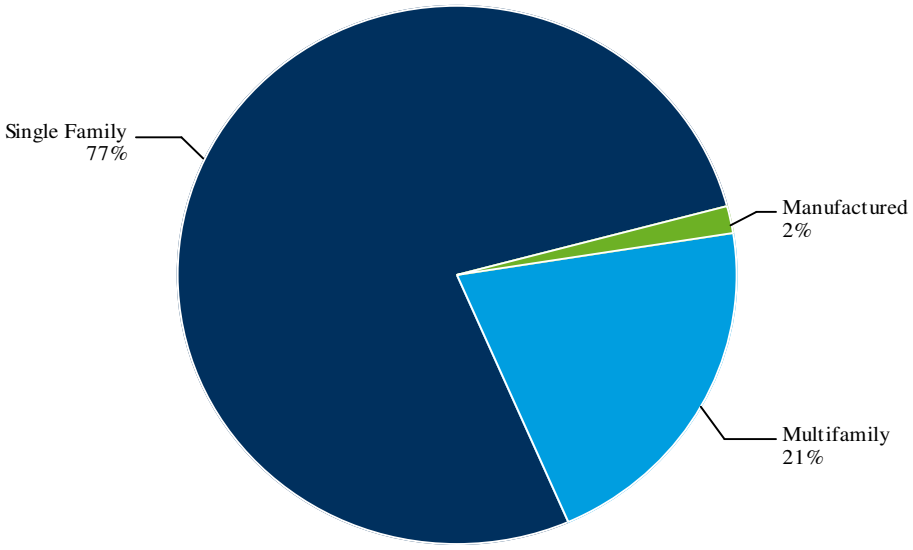


Figure C-3B.4. Baseline Sales 2032 - Washington: Residential by Segment

Total: 196 aMW

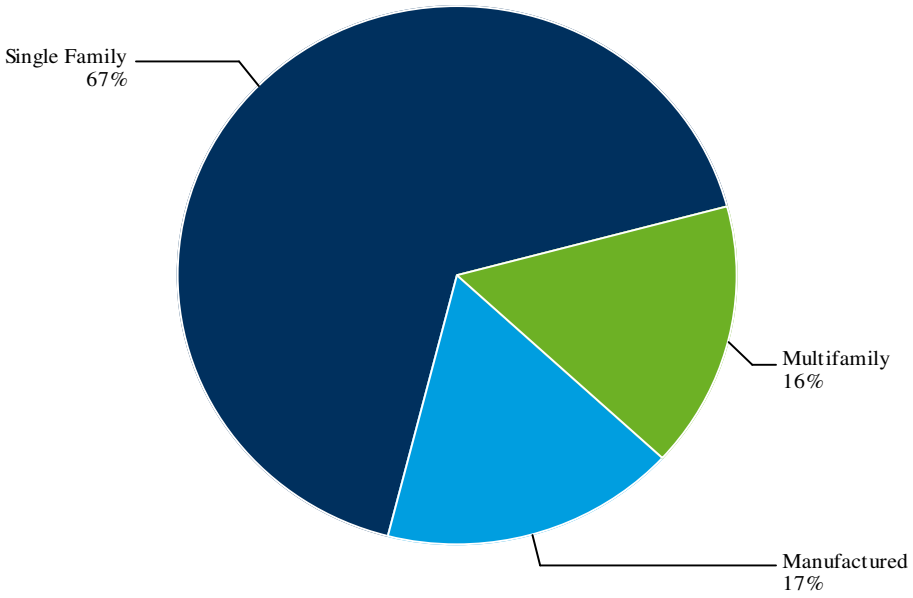


Figure C-3B.5. Baseline Sales 2032 - Wyoming: Residential by Segment

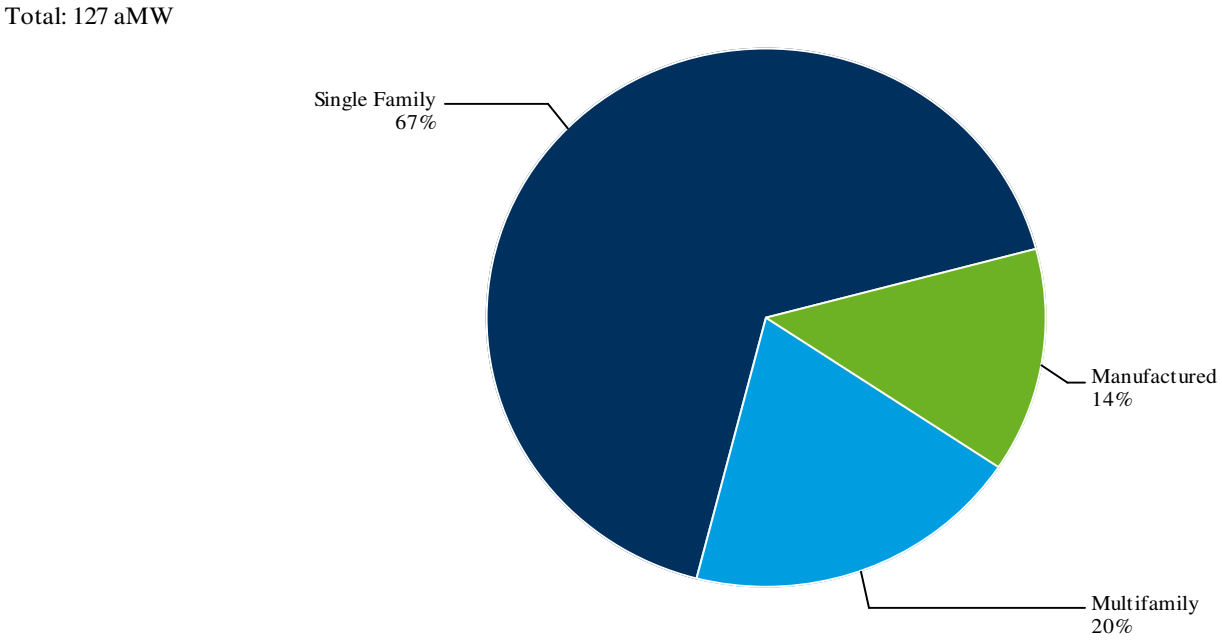


Figure C-3B.6. Baseline Sales 2032 - California: Commercial by Segment

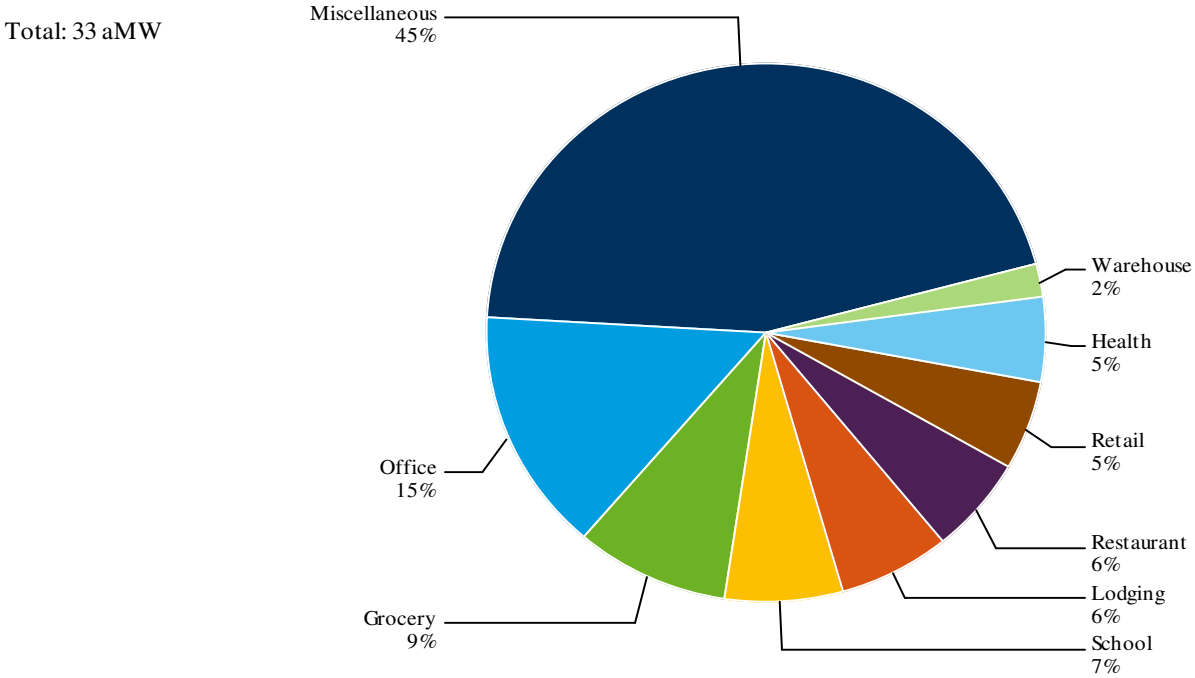
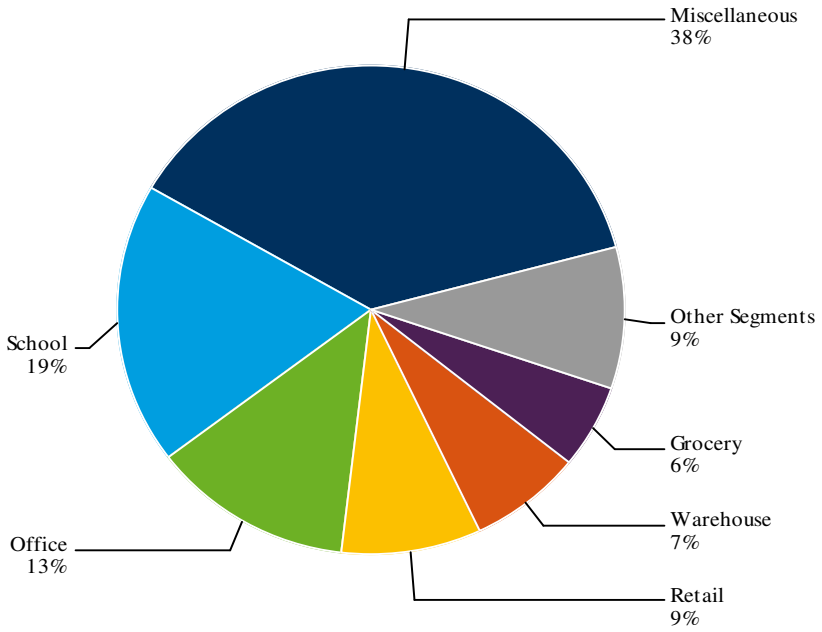


Figure C-3B.7. Baseline Sales 2032 - Idaho: Commercial by Segment

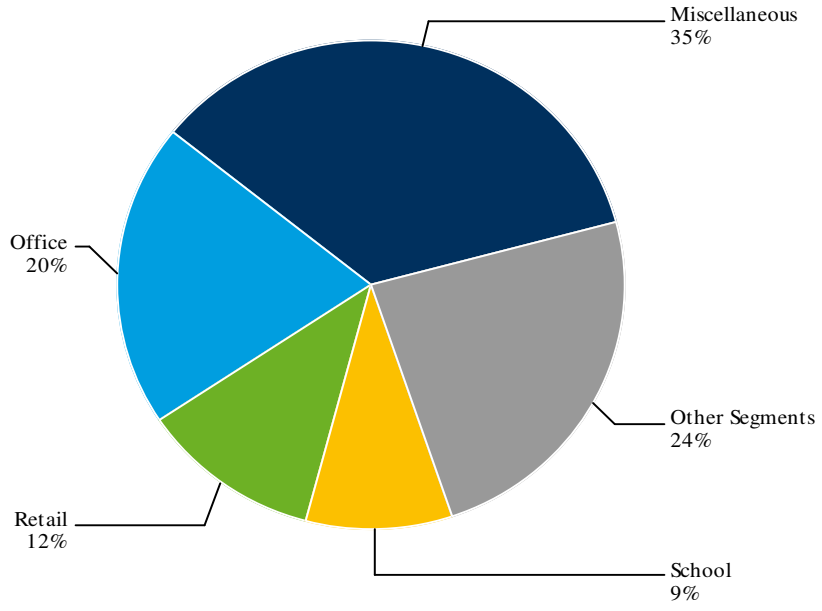
Total: 61 aMW



Note: 'Other Segments' includes:
Restaurant: 4%, Health: 4%, Lodging: 1%

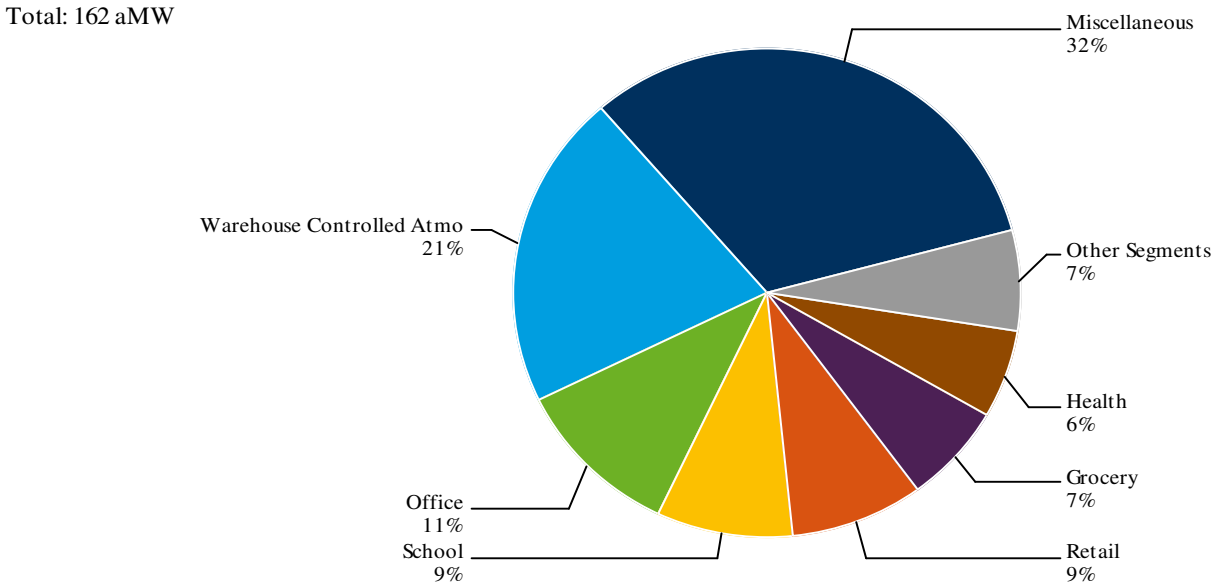
Figure C-3B.8. Baseline Sales 2032 - Utah: Commercial by Segment

Total: 1,064 aMW



Note: 'Other Segments' includes:
Restaurant: 5%, Warehouse: 5%, Health: 4%, Grocery: 4%, Data Center: 4%, Lodging: 3%

Figure C-3B.9. Baseline Sales 2032 - Washington: Commercial by Segment



Note: 'Other Segments' includes:
Restaurant: 4%, Lodging: 2%, Warehouse: <1%

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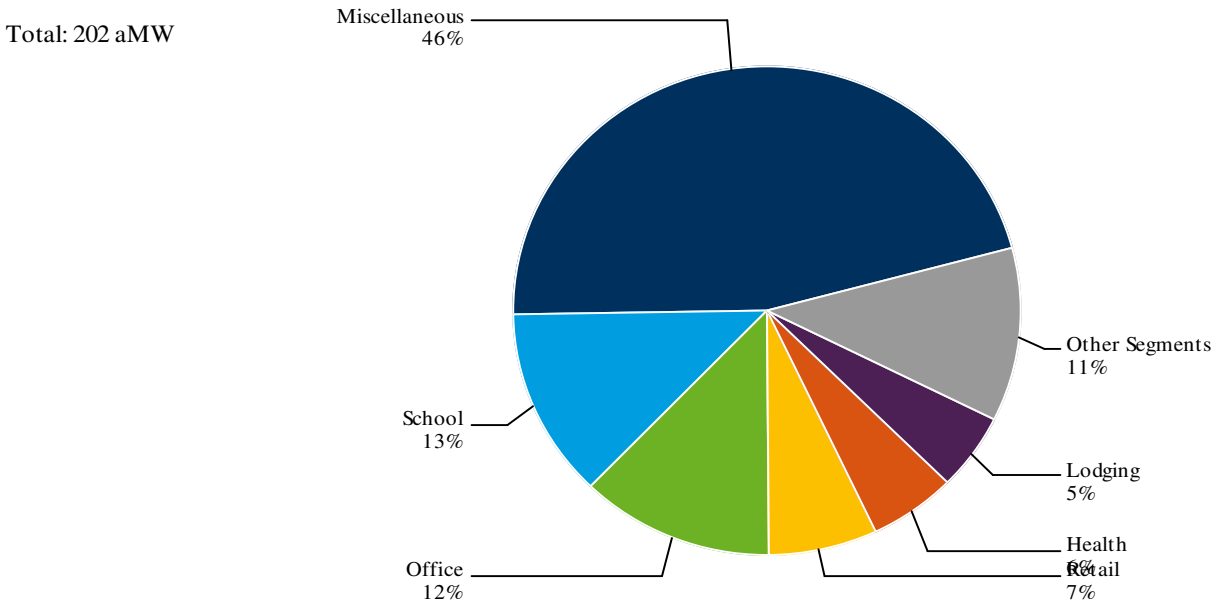
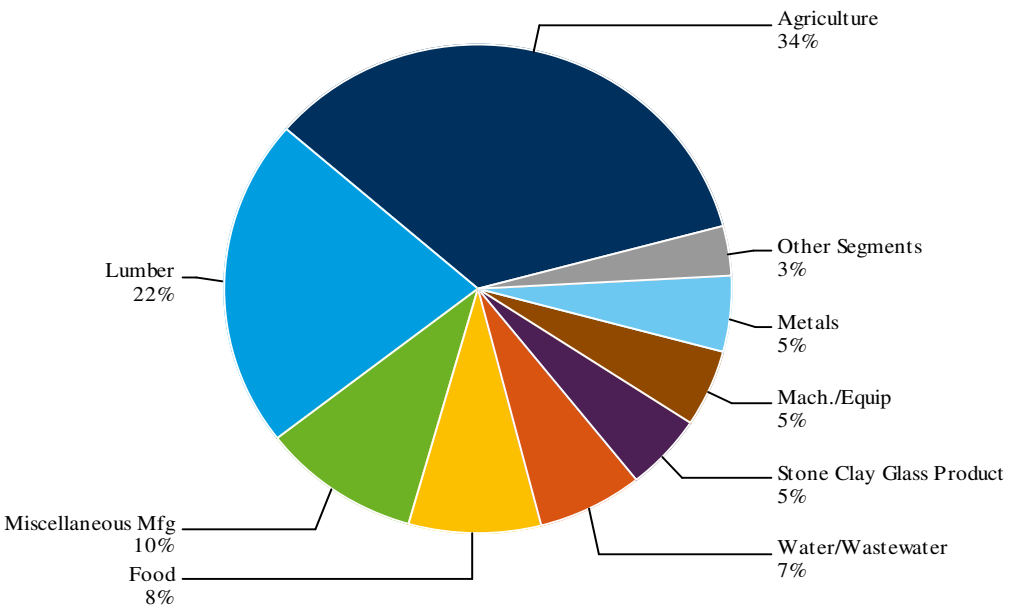
Figure C-3B.10. Baseline Sales 2032 - Wyoming: Commercial by Segment



Note: 'Other Segments' includes:
Restaurant: 5%, Grocery: 4%, Warehouse: 2%

Figure C-3B.11. Baseline Sales 2032 - California: Industrial by Segment

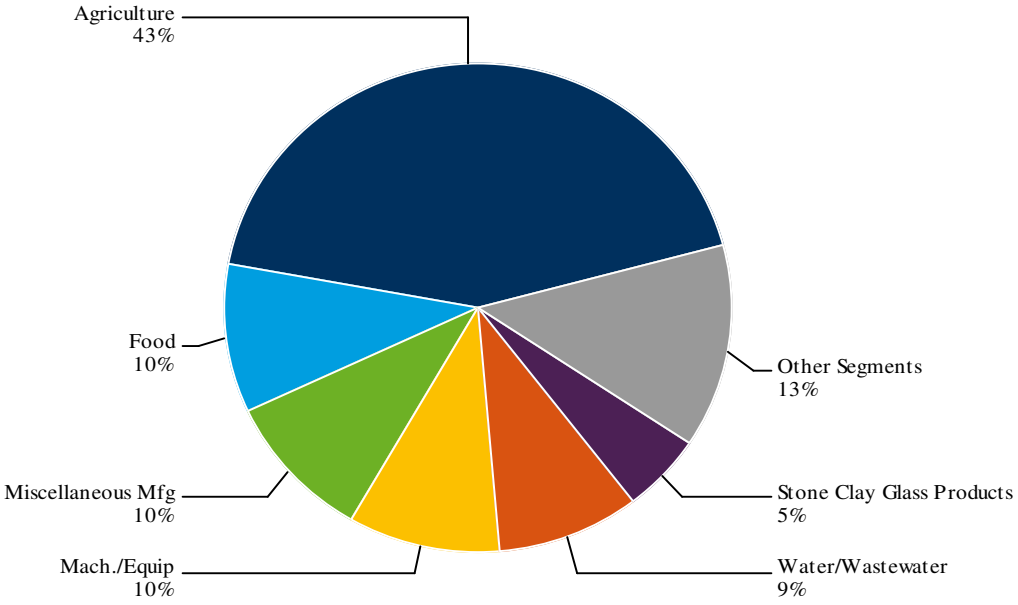
Total: 4 aMW



Note: 'Other Segments' includes:
Petroleum: 2%, Transportation: 2%

Figure C-3B.12. Baseline Sales 2032 - Idaho: Industrial by Segment

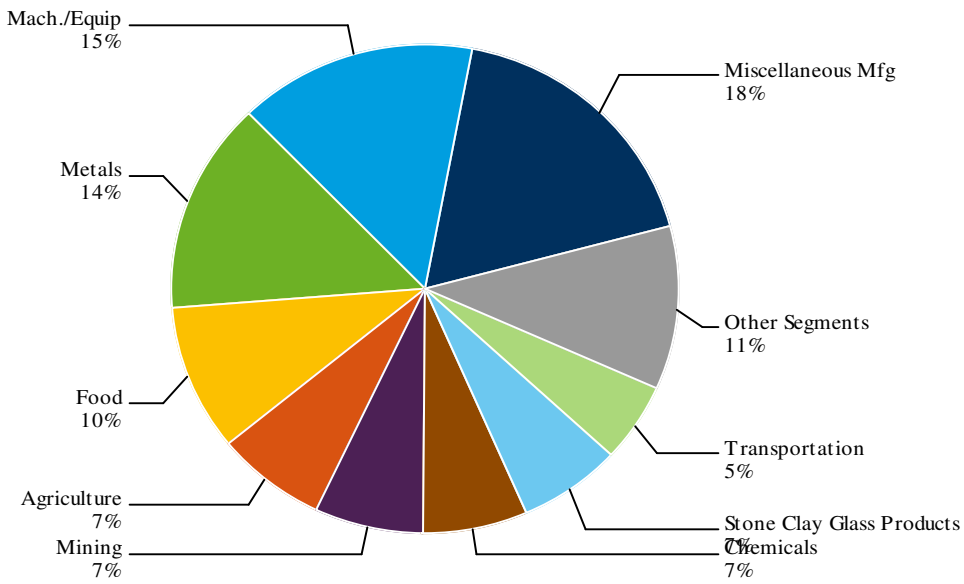
Total: 29 aMW



Note: 'Other Segments' includes:
Chemicals: 5%, Lumber: 4%, Transportation: 4%, Petroleum: <1%, Metals: <1%

Figure C-3B.13. Baseline Sales 2032 - Utah: Industrial by Segment

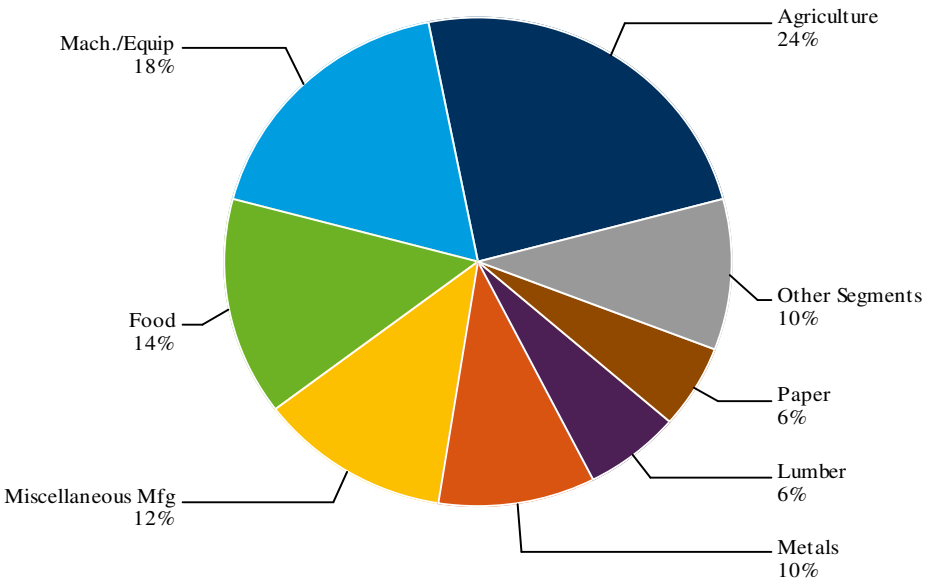
Total: 1,084 aMW



Note: 'Other Segments' includes:
Lumber: 4%, Water/Wastewater: 4%, Paper: 2%, Petroleum: 1%

Figure C-3B.14. Baseline Sales 2032 - Washington: Industrial by Segment

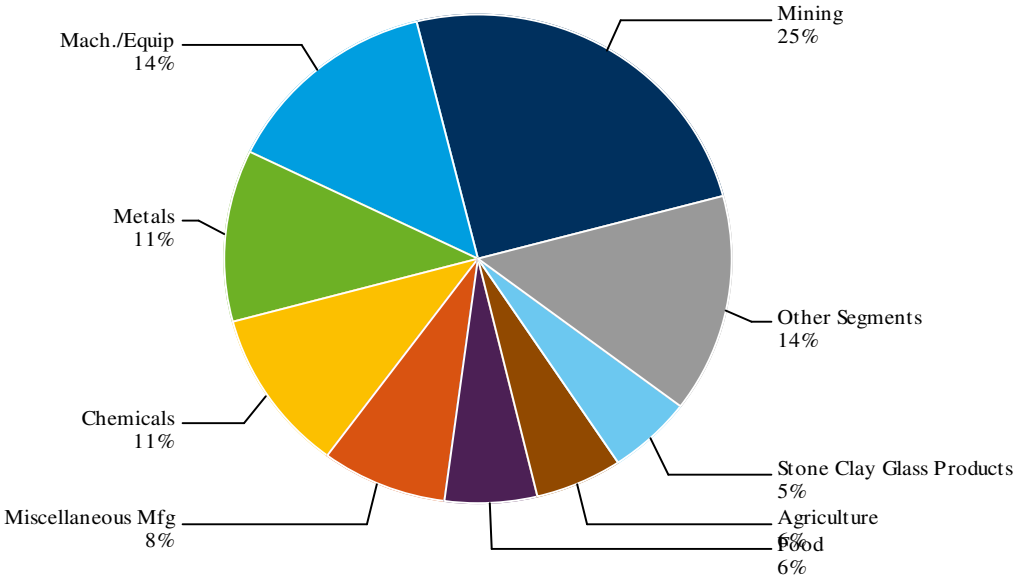
Total: 108 aMW



Note: 'Other Segments' includes:
Water/Wastewater: 4%, Stone Clay Glass Products: 3%, Chemicals: 1%, Petroleum: 1%, Transportation: 1%

Figure C-3B.15. Baseline Sales 2032 - Wyoming: Industrial by Segment

Total: 1,127 aMW



Note: 'Other Segments' includes:
Water/Wastewater: 5%, Lumber: 4%, Petroleum: 3%, Transportation: 3%

Figure C-3B.16. Baseline Sales 2032 - California: Street Lighting by Segment

Total: 0 aMW

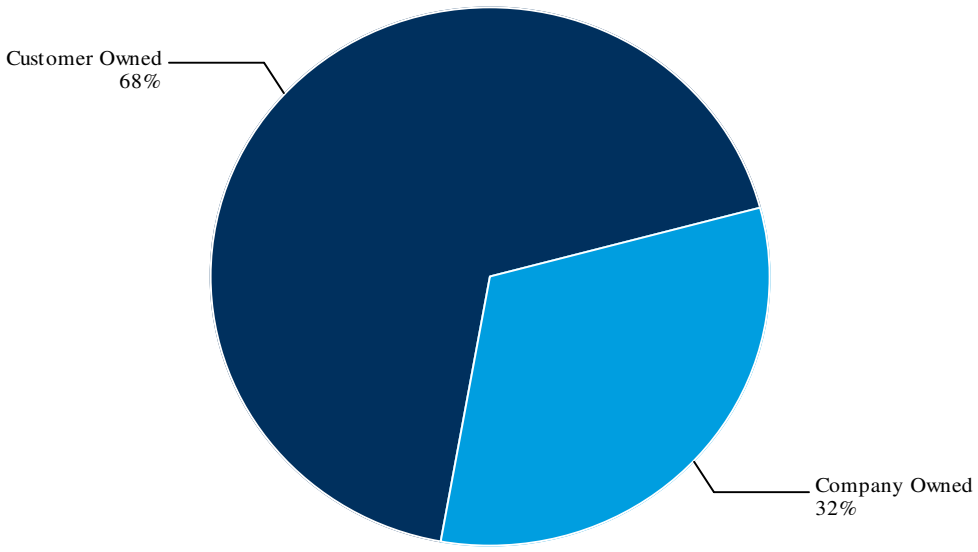


Figure C-3B.17. Baseline Sales 2032 - Idaho: Street Lighting by Segment

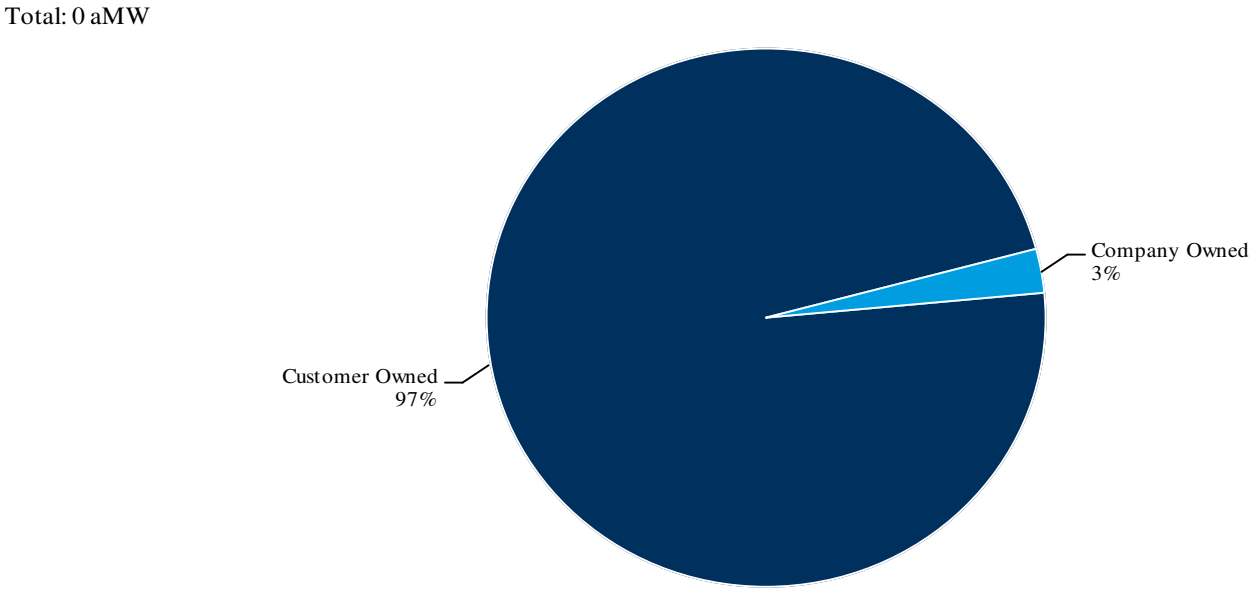


Figure C-3B.18. Baseline Sales 2032 - Utah: Street Lighting by Segment

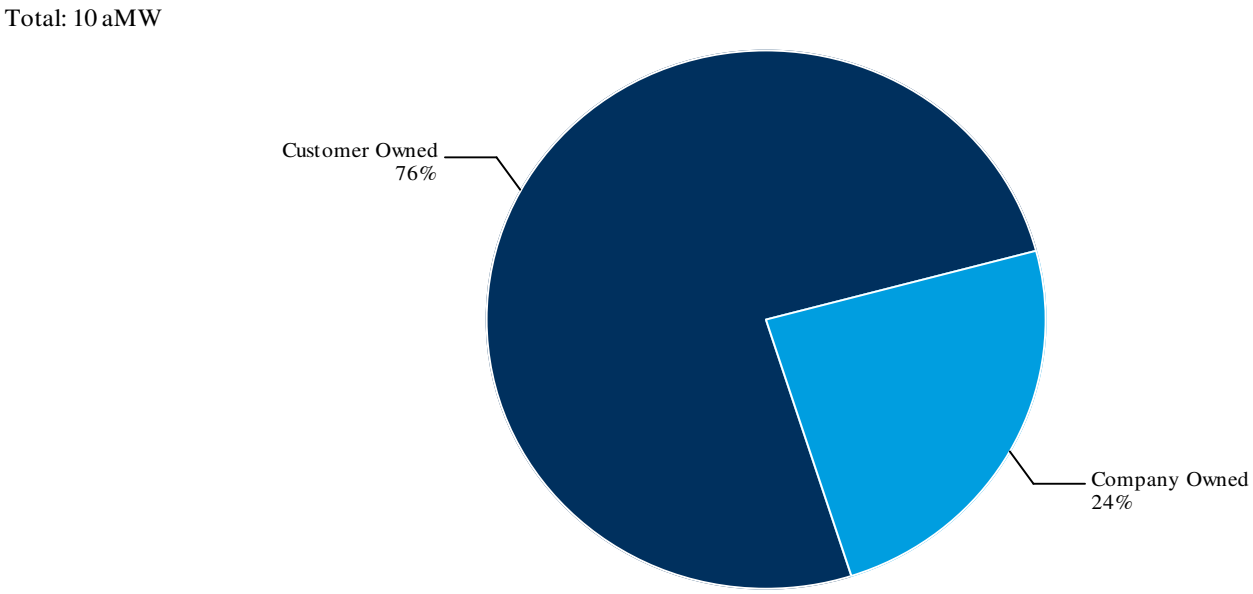


Figure C-3B.19. Baseline Sales 2032 - Washington: Street Lighting by Segment

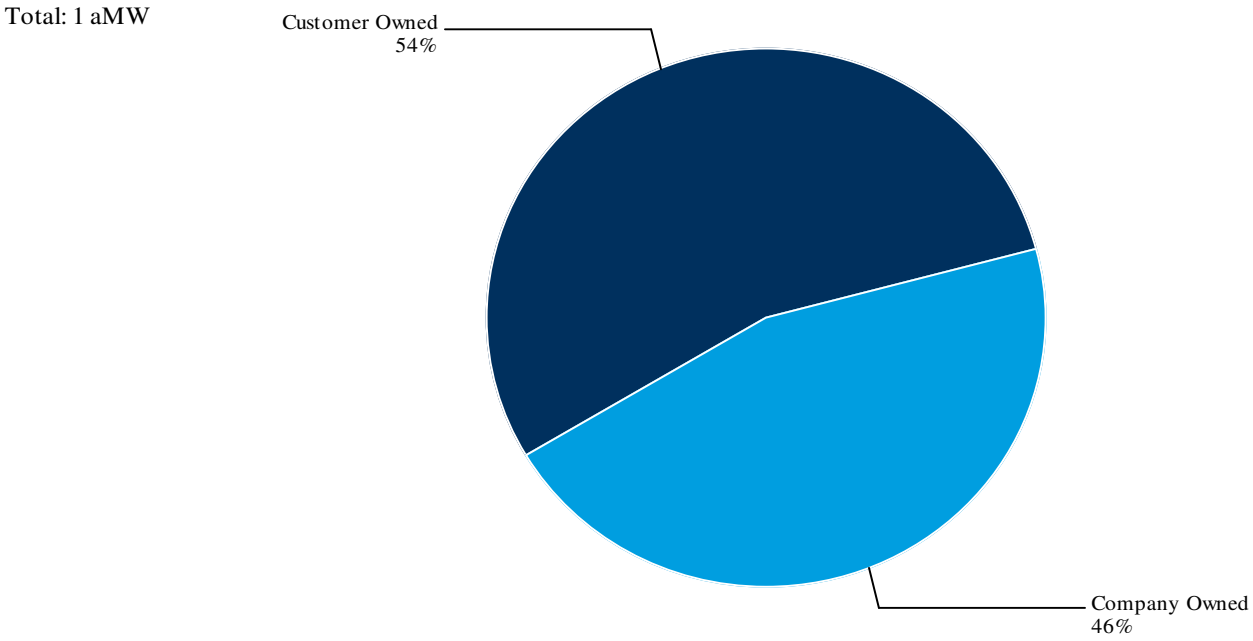


Figure C-3B.20. Baseline Sales 2032 - Wyoming: Street Lighting by Segment

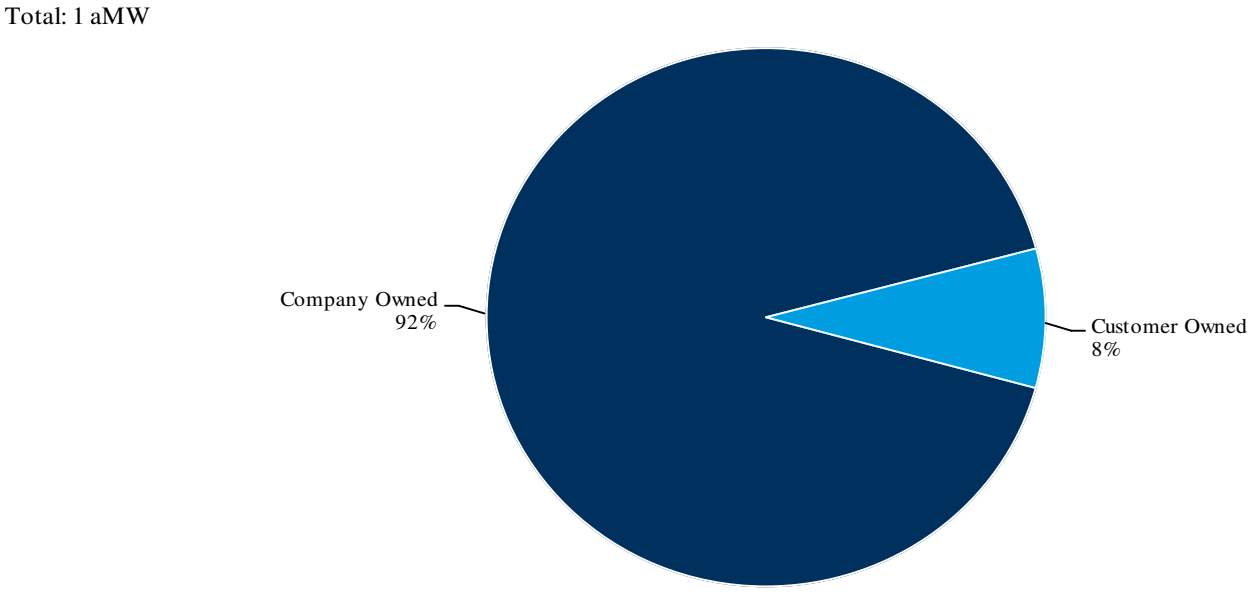
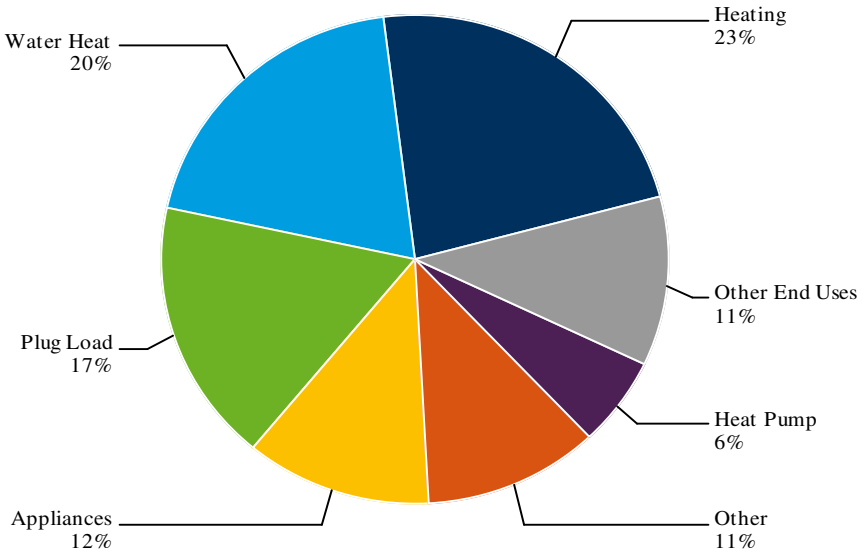


Figure C-3B.21. Baseline Sales 2032 - California: Residential by End Use

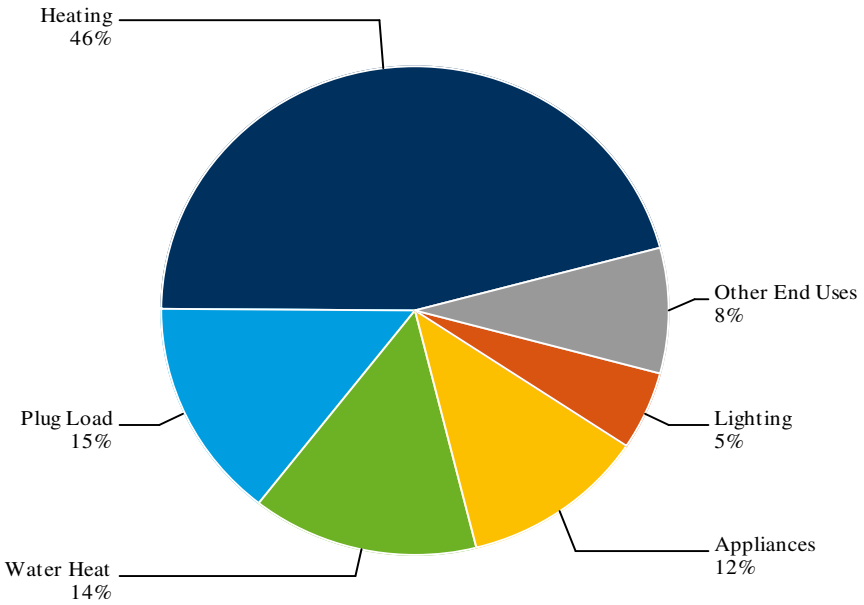
Total: 46 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Cooling: 3%, Ventilation And Circulation: 2%, Cooking: 1%, Pool Pump: <1%

Figure C-3B.22. Baseline Sales 2032 - Idaho: Residential by End Use

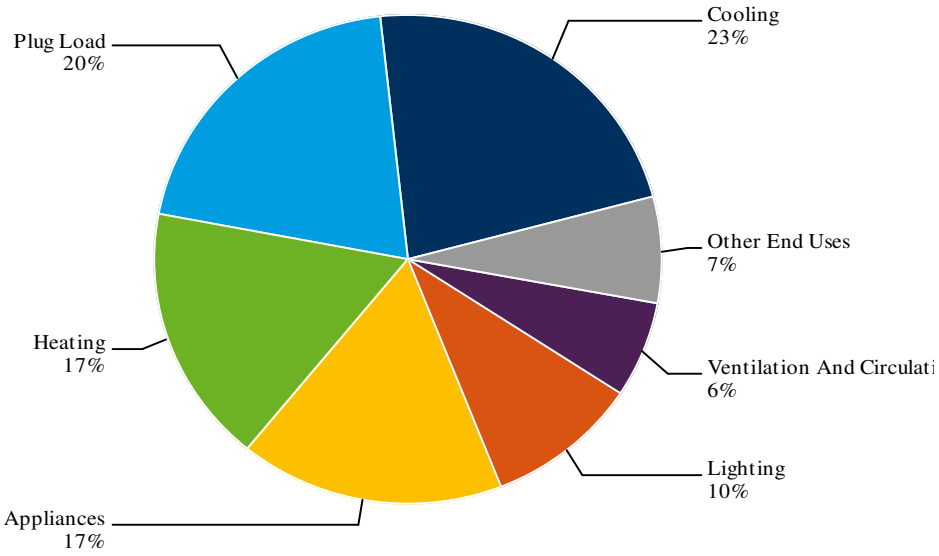
Total: 106 aMW



Note: 'Other End Uses' includes:
Cooling: 3%, Ventilation And Circulation: 3%, Cooking: <1%, Heat Pump: <1%, Pool Pump: <1%

Figure C-3B.23. Baseline Sales 2032 - Utah: Residential by End Use

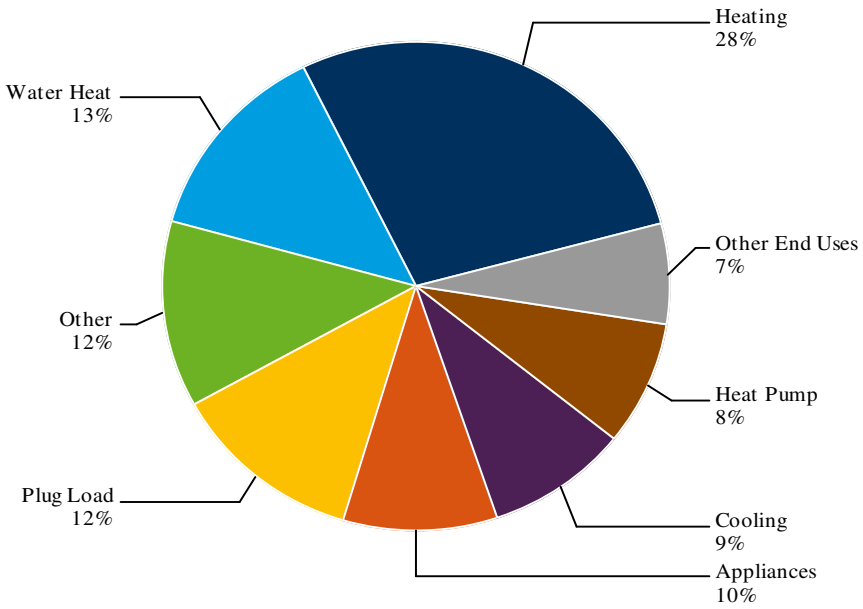
Total: 820 aMW



Note: 'Other End Uses' includes:
Water Heat: 5%, Cooking: 1%, Heat Pump: <1%, Pool Pump: <1%

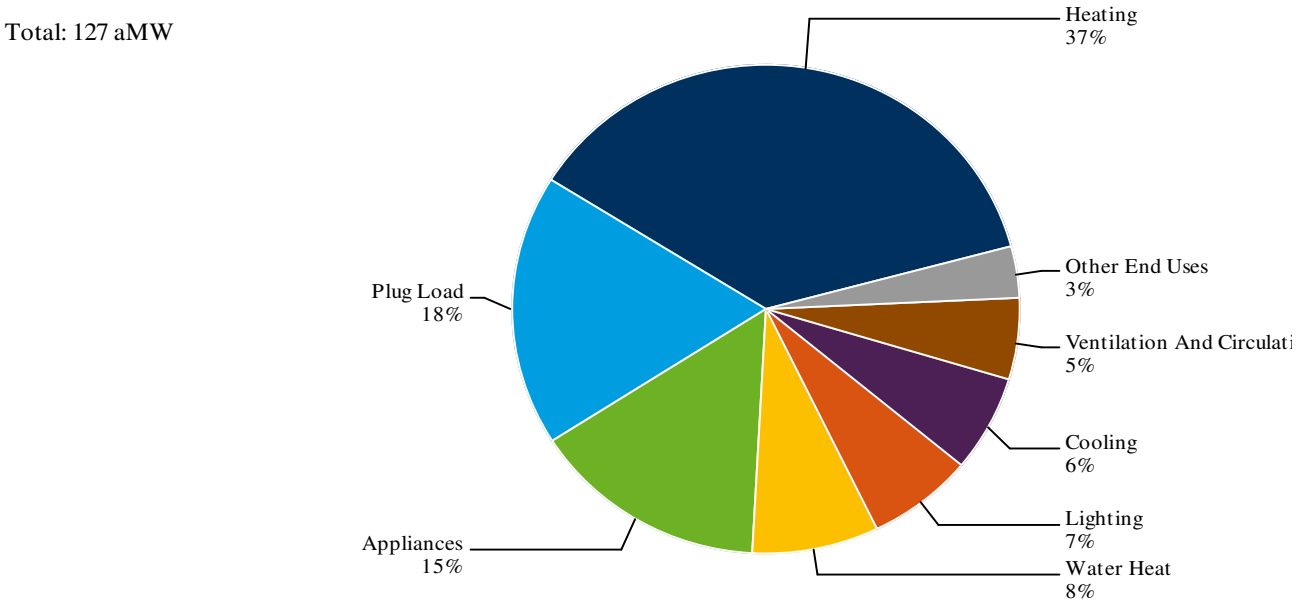
Figure C-3B.24. Baseline Sales 2032 - Washington: Residential by End Use

Total: 196 aMW



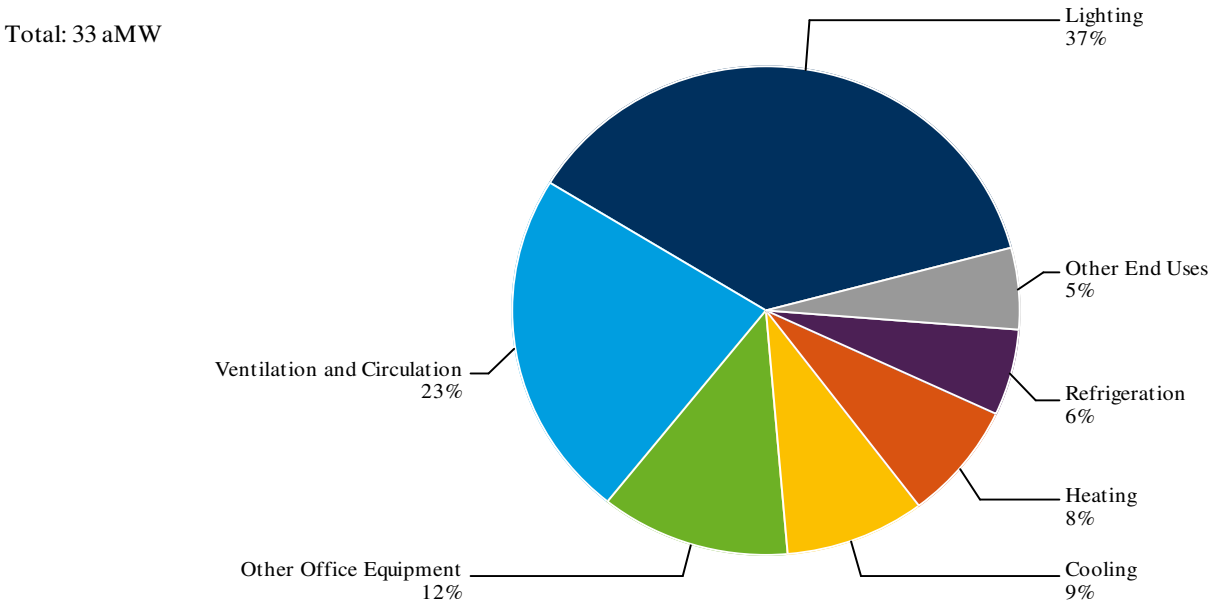
Note: 'Other End Uses' includes:
Lighting: 4%, Ventilation And Circulation: 2%, Cooking: <1%, Pool Pump: <1%

Figure C-3B.25. Baseline Sales 2032 - Wyoming: Residential by End Use



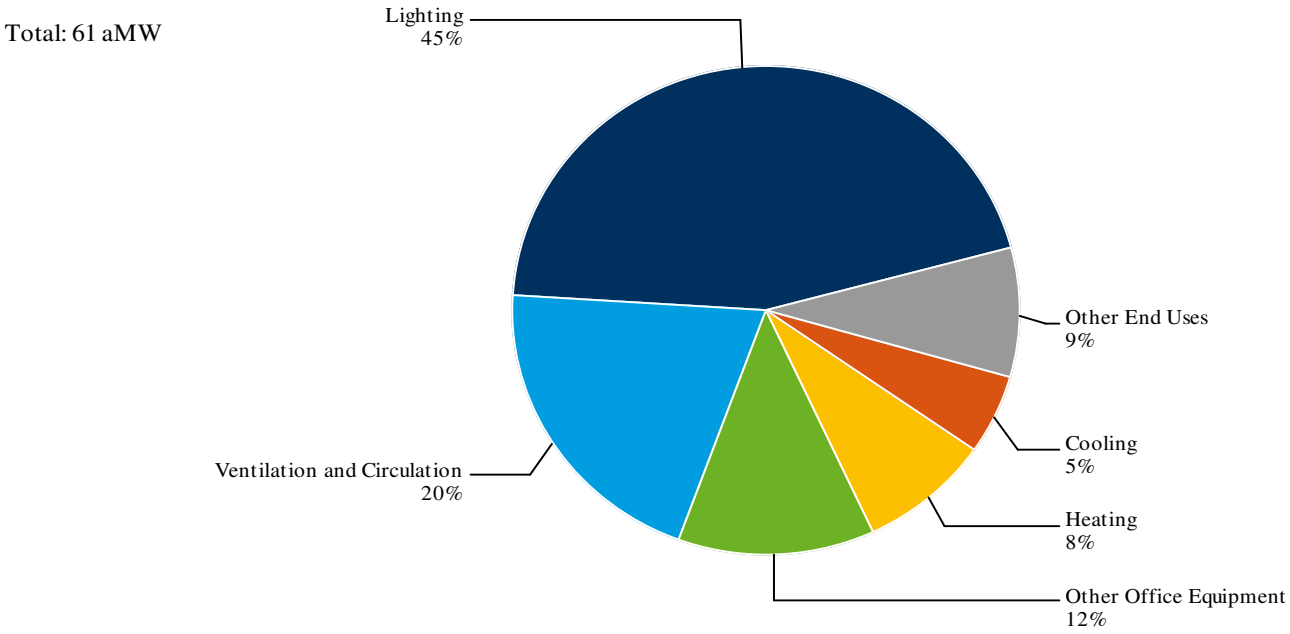
Note: 'Other End Uses' includes:
Heat Pump: 2%, Cooking: 1%, Pool Pump: <1%

Figure C-3B.26. Baseline Sales 2032 - California: Commercial by End Use



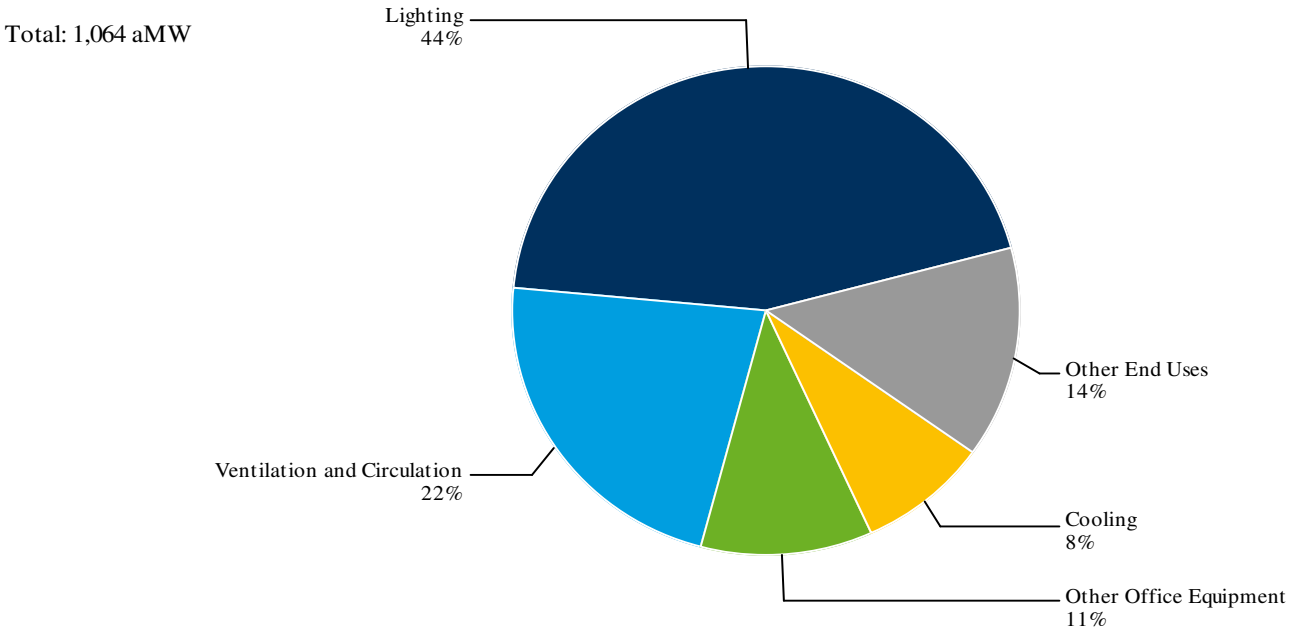
Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 1%, Cooking: <1%, Appliances: <1%

Figure C-3B.27. Baseline Sales 2032 - Idaho: Commercial by End Use



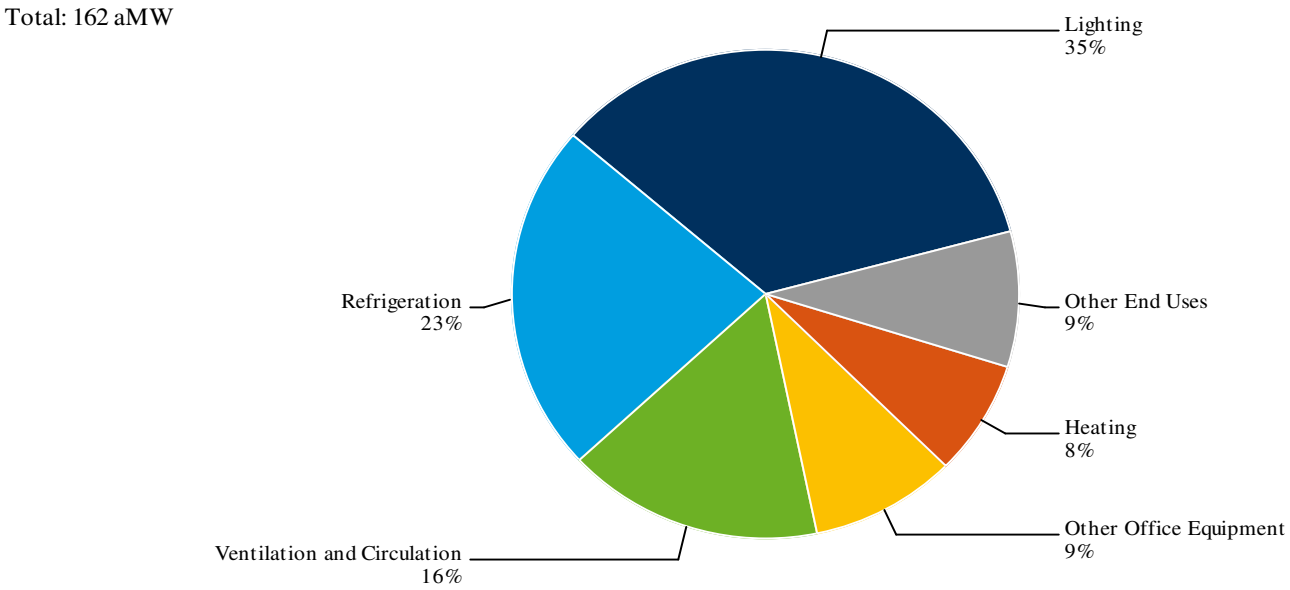
Note: 'Other End Uses' includes:
Refrigeration: 4%, Water Heat: 2%, Heat Pump: 1%, Cooking: <1%, Appliances: <1%

Figure C-3B.28. Baseline Sales 2032 - Utah: Commercial by End Use



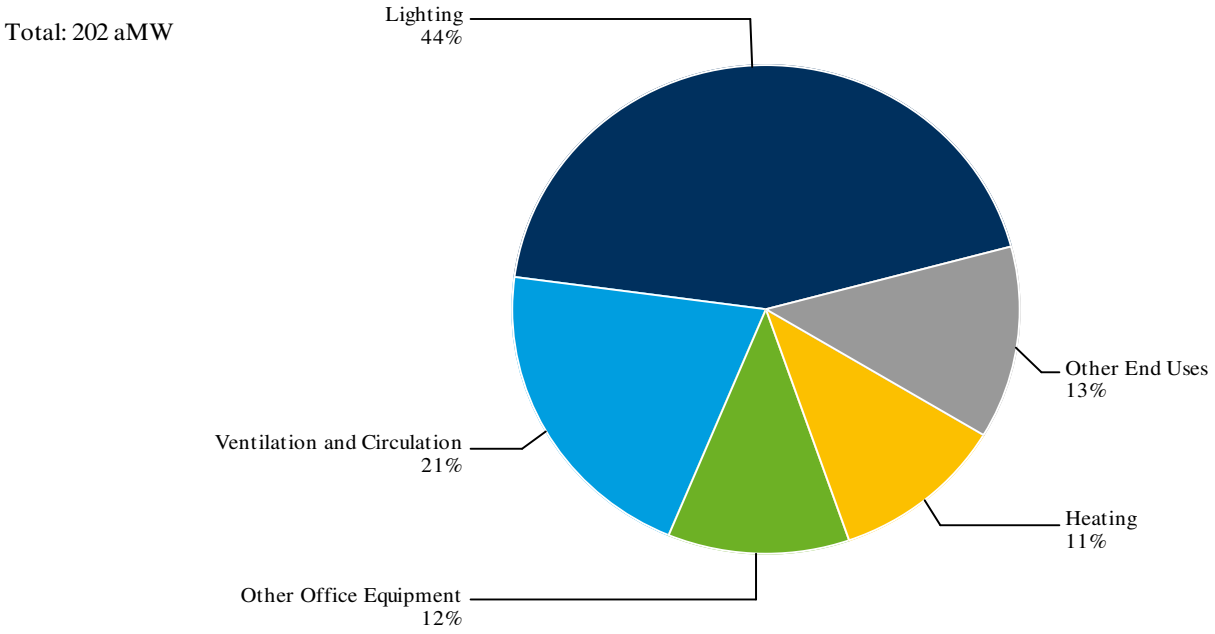
Note: 'Other End Uses' includes:
Other: 4%, Refrigeration: 4%, Heating: 3%, Heat Pump: 2%, Water Heat: 1%, Appliances: <1%, Cooking: <1%

Figure C-3B.29. Baseline Sales 2032 - Washington: Commercial by End Use



Note: 'Other End Uses' includes:
Cooling: 5%, Water Heat: 2%, Heat Pump: 2%, Appliances: <1%, Cooking: <1%

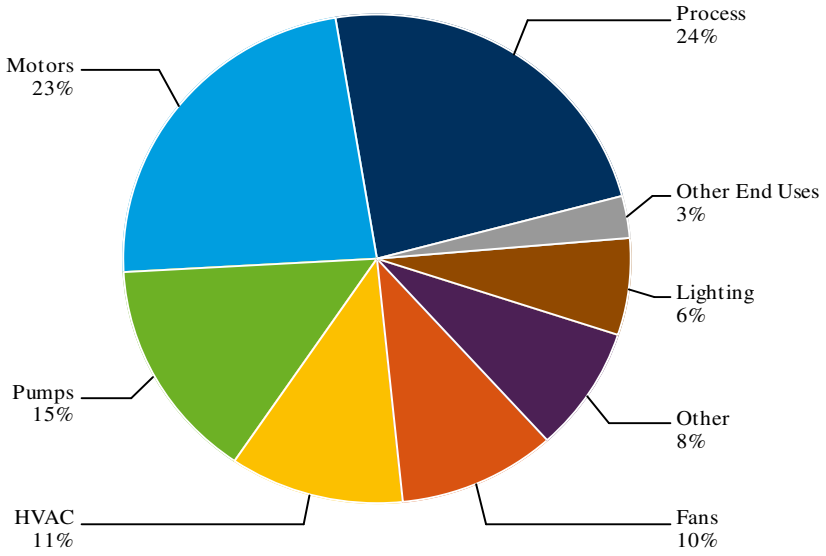
Figure C-3B.30. Baseline Sales 2032 - Wyoming: Commercial by End Use



Note: 'Other End Uses' includes:
Cooling: 5%, Refrigeration: 4%, Water Heat: 2%, Heat Pump: 2%, Appliances: <1%, Cooking: <1%

Figure C-3B.31. Baseline Sales 2032 - California: Industrial by End Use

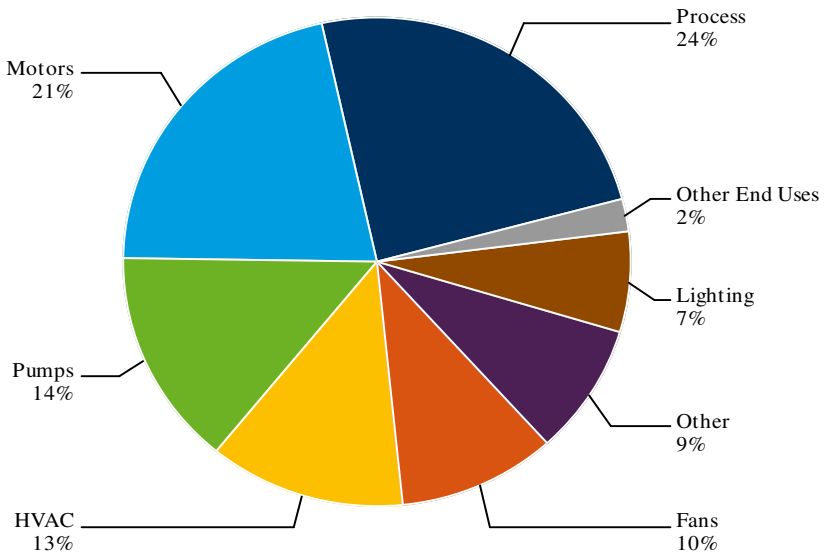
Total: 4 aMW



Note: 'Other End Uses' includes:
Process Electro Chemical: 2%, Indirect Boiler: 1%

Figure C-3B.32. Baseline Sales 2032 - Idaho: Industrial by End Use

Total: 29 aMW



Note: 'Other End Uses' includes:
Process Electro Chemical: 1%, Indirect Boiler: 1%

Figure C-3B.33. Baseline Sales 2032 - Utah: Industrial by End Use

Total: 1,084 aMW

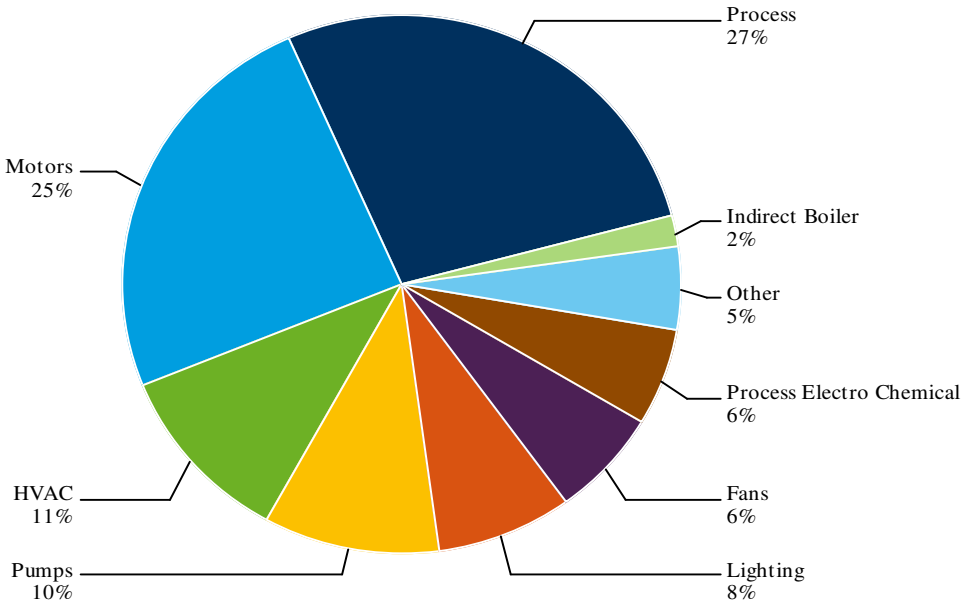
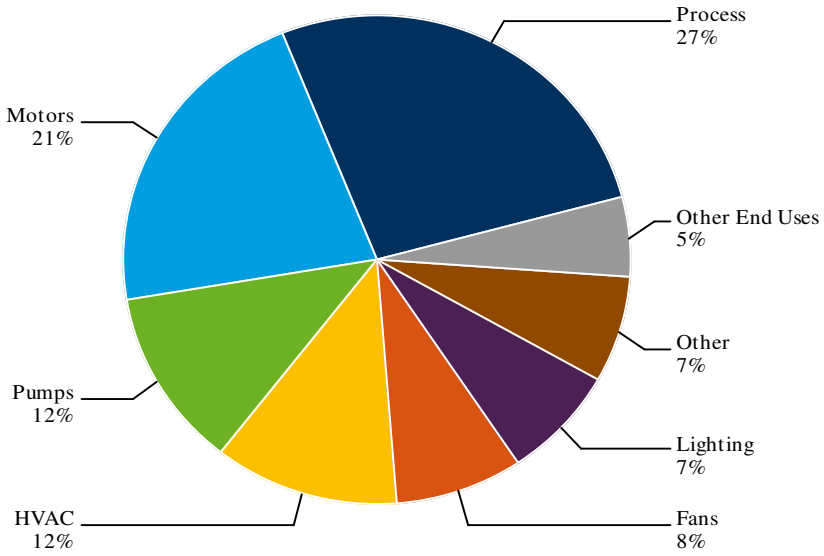


Figure C-3B.34. Baseline Sales 2032 - Washington: Industrial by End Use

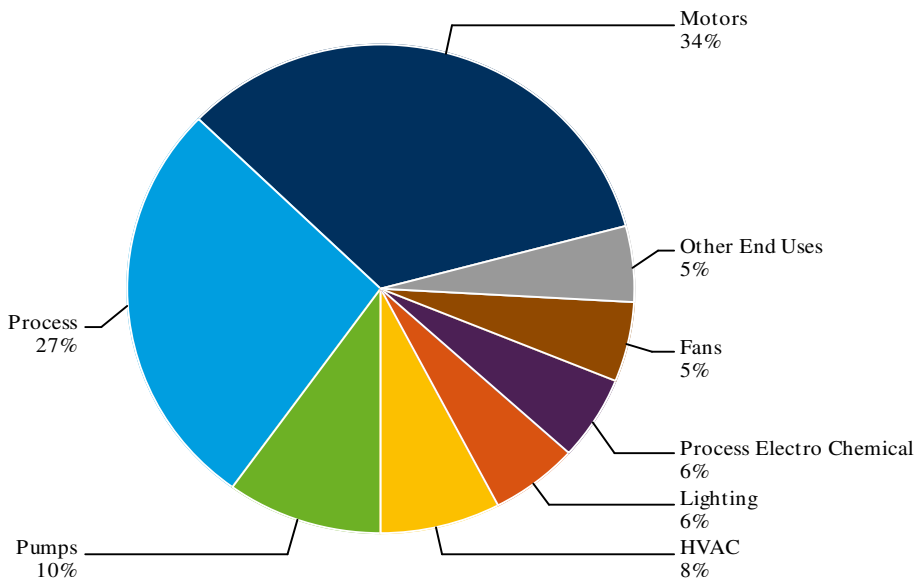
Total: 108 aMW



Note: 'Other End Uses' includes:
Process Electro Chemical: 4%, Indirect Boiler: 1%

Figure C-3B.35. Baseline Sales 2032 - Wyoming: Industrial by End Use

Total: 1,127 aMW



Note: 'Other End Uses' includes:
Other: 4%, Indirect Boiler: <1%

Figure C-3B.36. Baseline Sales 2032 - California: Street Lighting by End Use

Total: 0 aMW

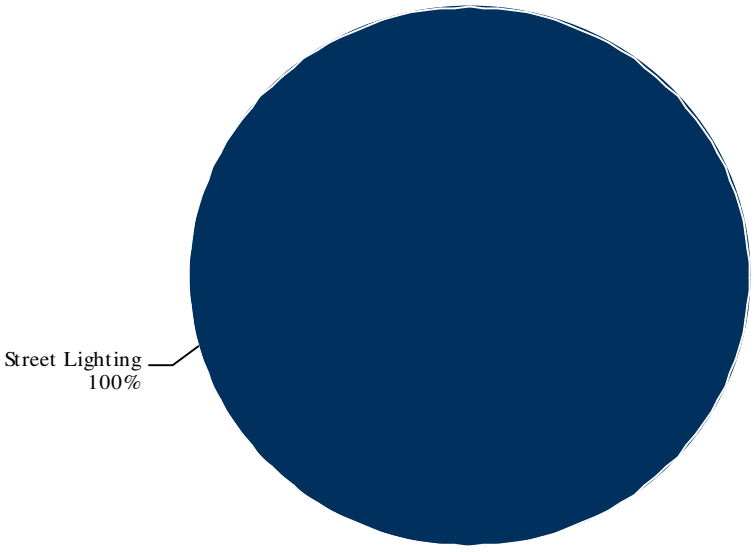


Figure C-3B.37. Baseline Sales 2032 - Idaho: Street Lighting by End Use

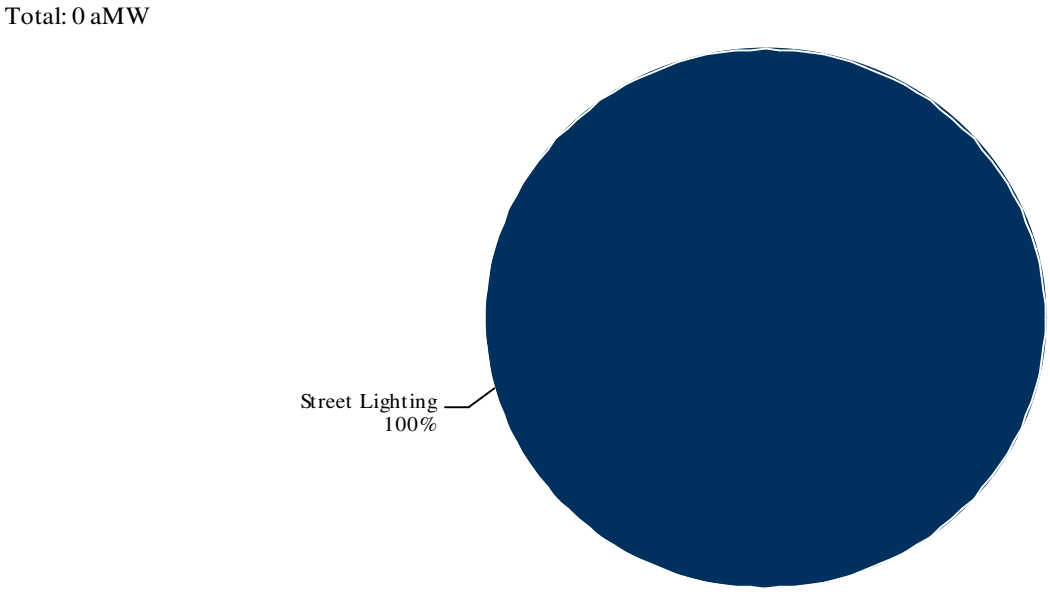


Figure C-3B.38. Baseline Sales 2032 - Utah: Street Lighting by End Use

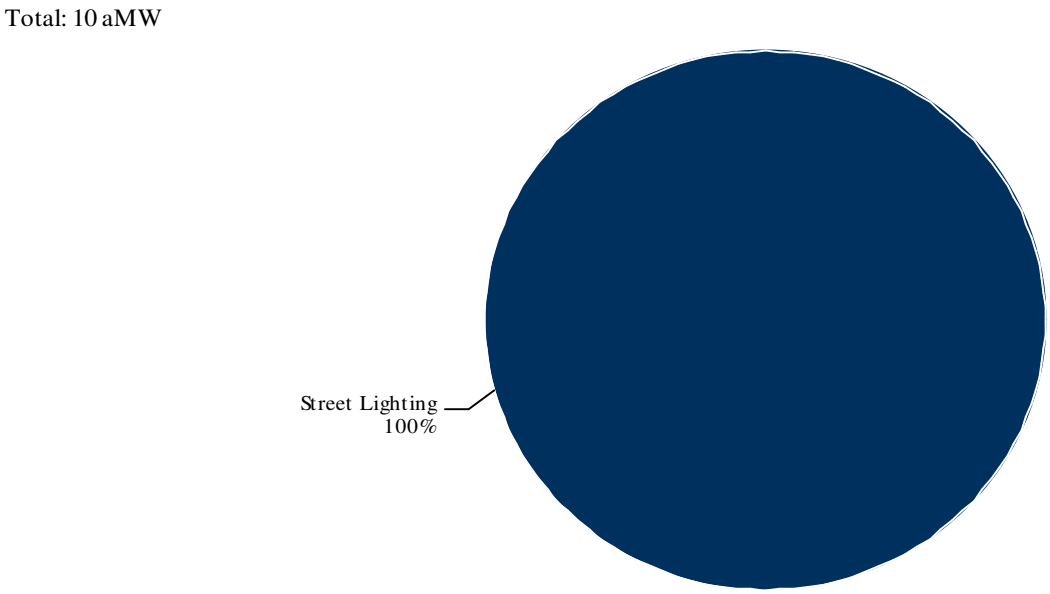


Figure C-3B.39. Baseline Sales 2032 - Washington: Street Lighting by End Use

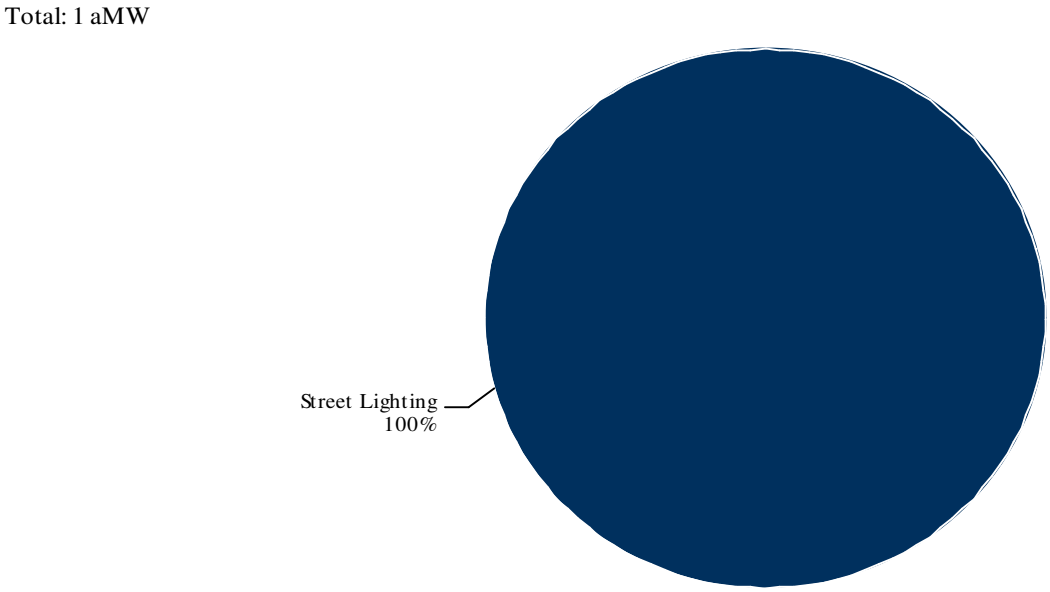


Figure C-3B.40. Baseline Sales 2032 - Wyoming: Street Lighting by End Use

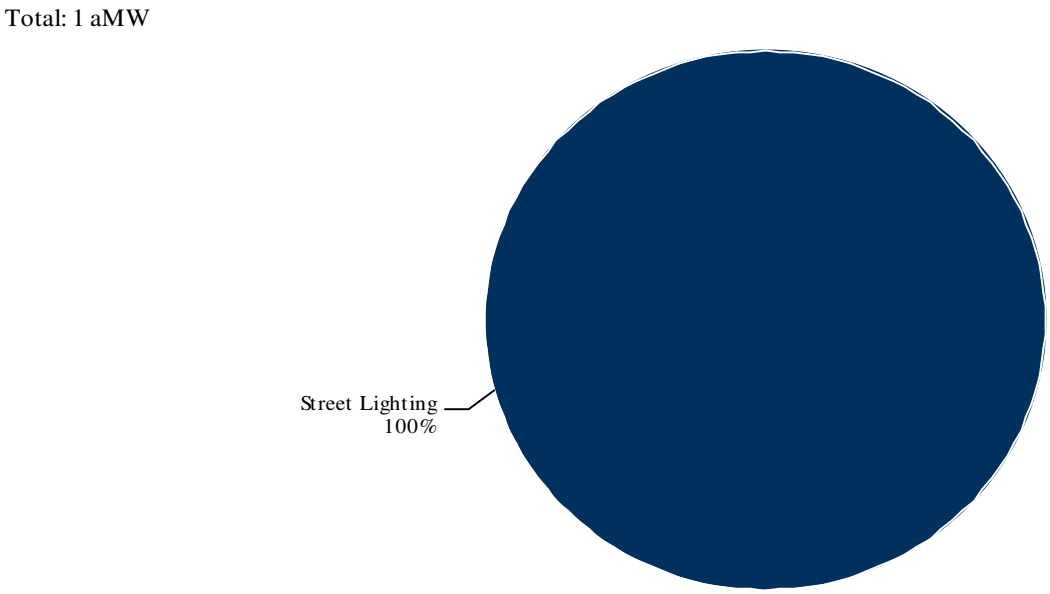
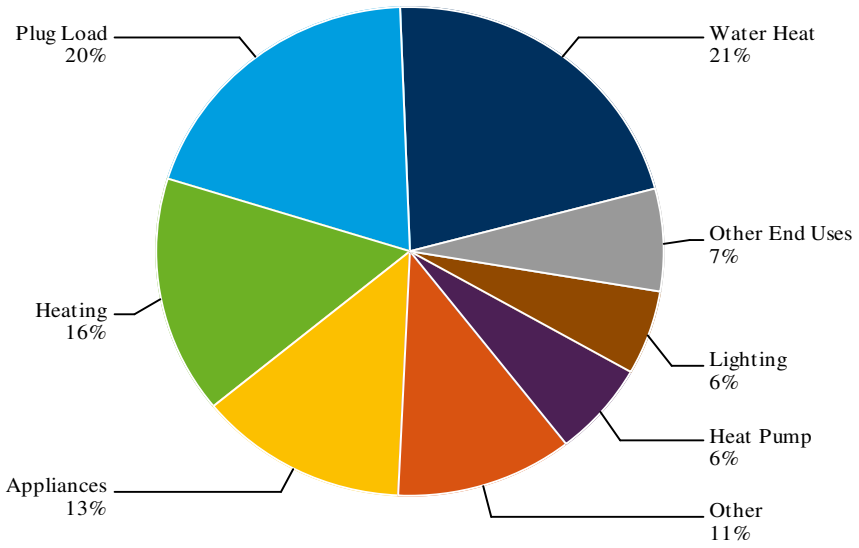


Figure C-3B.41. Baseline Sales 2032 - California: Residential Single Family by End Use

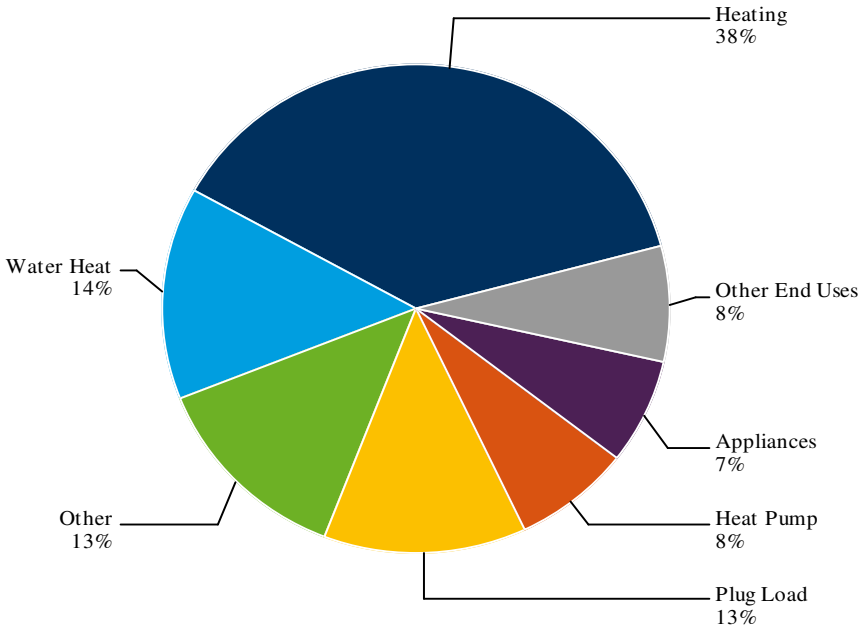
Total: 32 aMW



Note: 'Other End Uses' includes:
Cooling: 4%, Ventilation And Circulation: 2%, Cooking: 1%, Pool Pump: <1%

Figure C-3B.42. Baseline Sales 2032 - California: Residential Multifamily by End Use

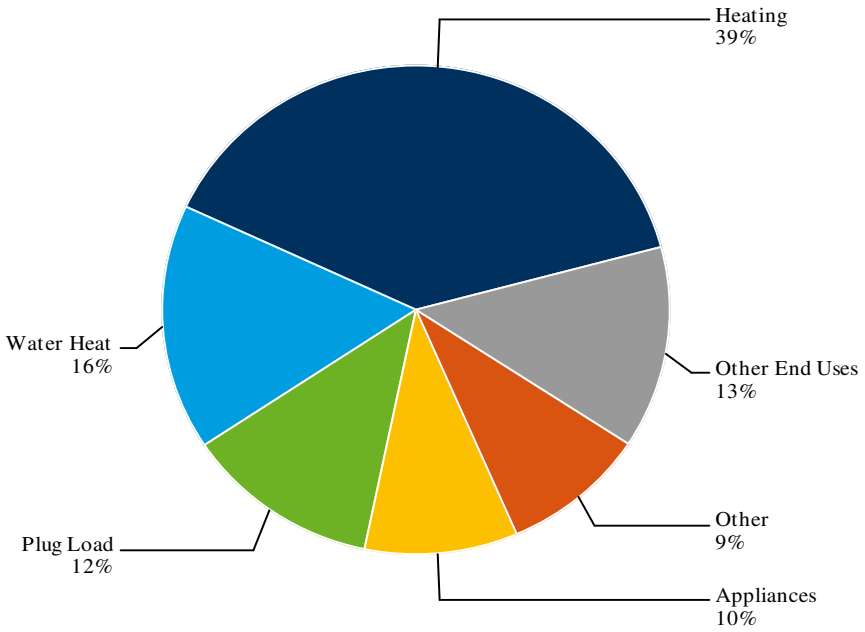
Total: 5 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Cooling: 2%, Cooking: 1%, Ventilation And Circulation: <1%

Figure C-3B.43. Baseline Sales 2032 - California: Residential Manufactured by End Use

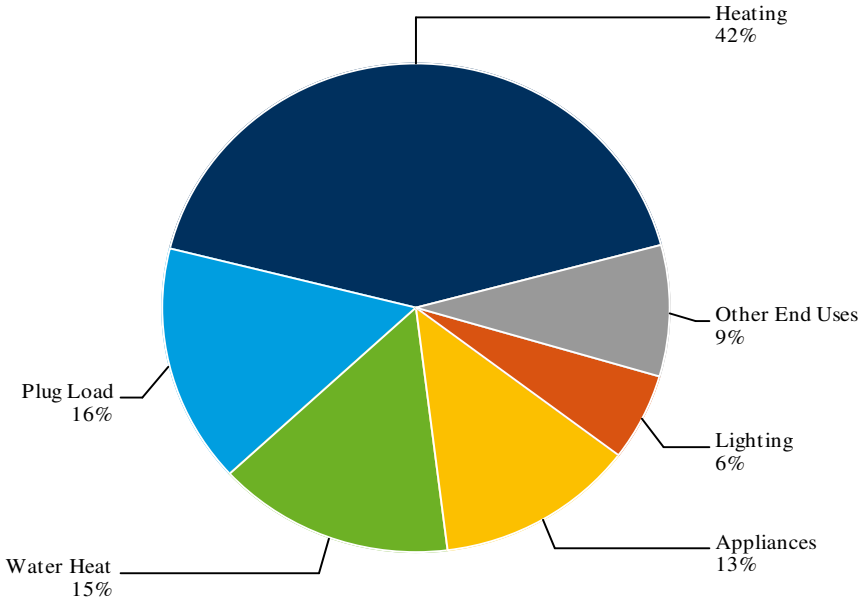
Total: 9 aMW



Note: 'Other End Uses' includes:
Heat Pump: 4%, Lighting: 4%, Cooling: 3%, Ventilation And Circulation: 2%, Cooking: 1%

Figure C-3B.44. Baseline Sales 2032 - Idaho: Residential Single Family by End Use

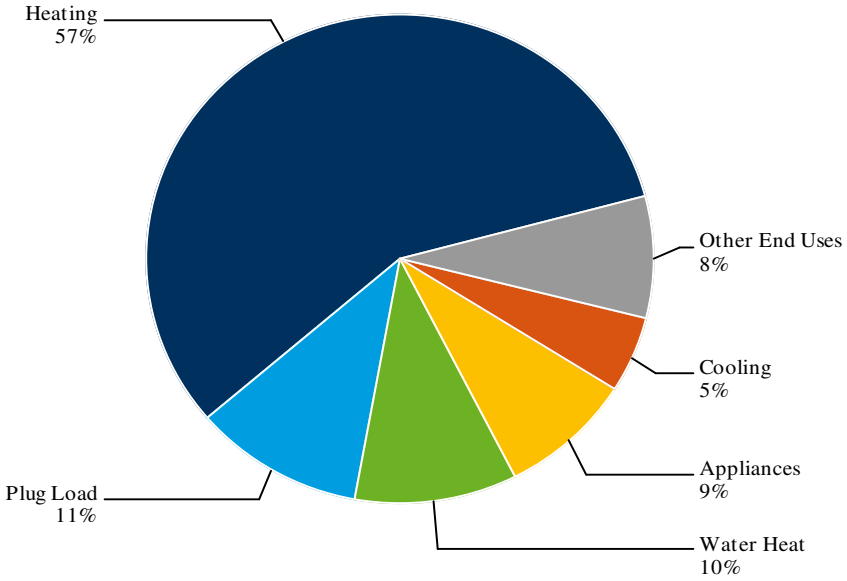
Total: 79 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 3%, Cooling: 3%, Heat Pump: 1%, Cooking: 1%, Pool Pump: <1%

Figure C-3B.45. Baseline Sales 2032 - Idaho: Residential Multifamily by End Use

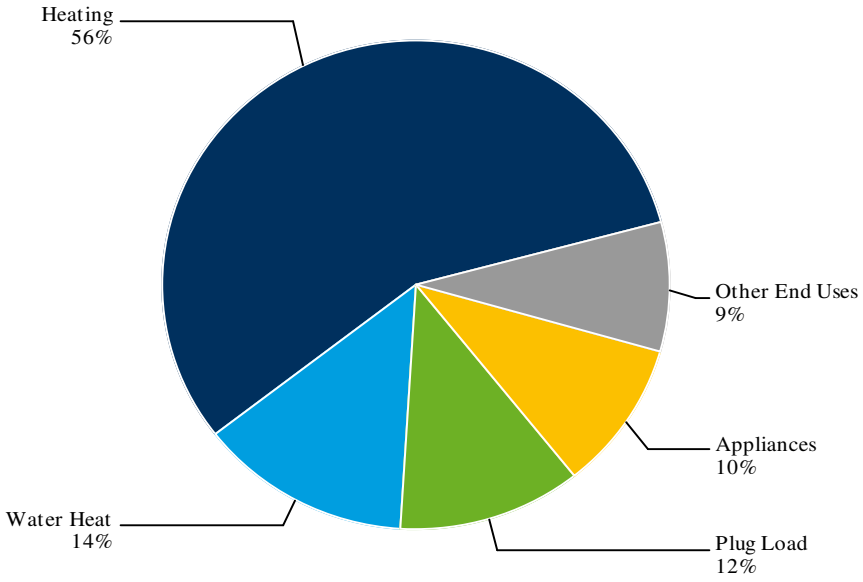
Total: 11 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Ventilation And Circulation: 3%, Cooking: 1%

Figure C-3B.46. Baseline Sales 2032 - Idaho: Residential Manufactured by End Use

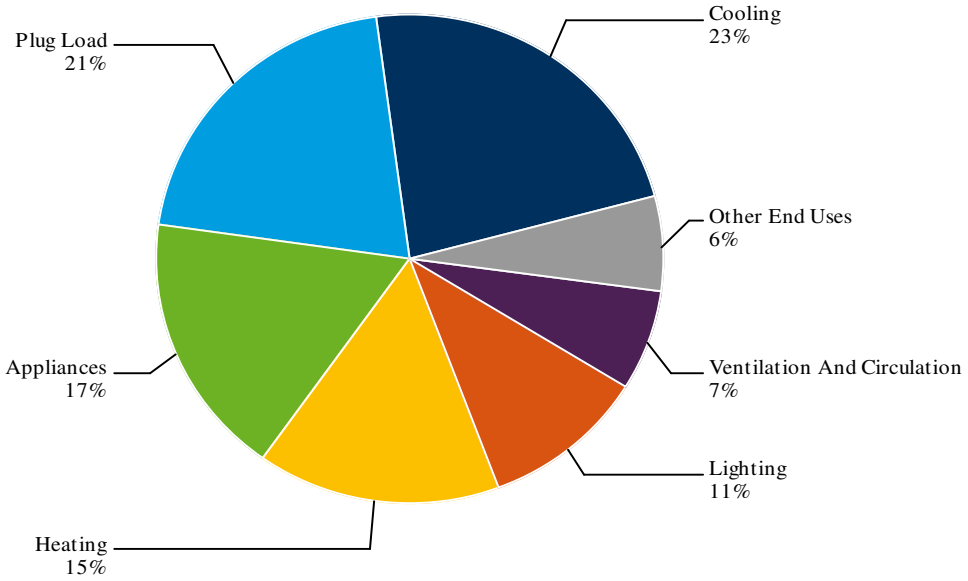
Total: 16 aMW



Note: 'Other End Uses' includes:
Lighting: 3%, Ventilation And Circulation: 3%, Cooling: 2%, Cooking: <1%

Figure C-3B.47. Baseline Sales 2032 - Utah: Residential Single Family by End Use

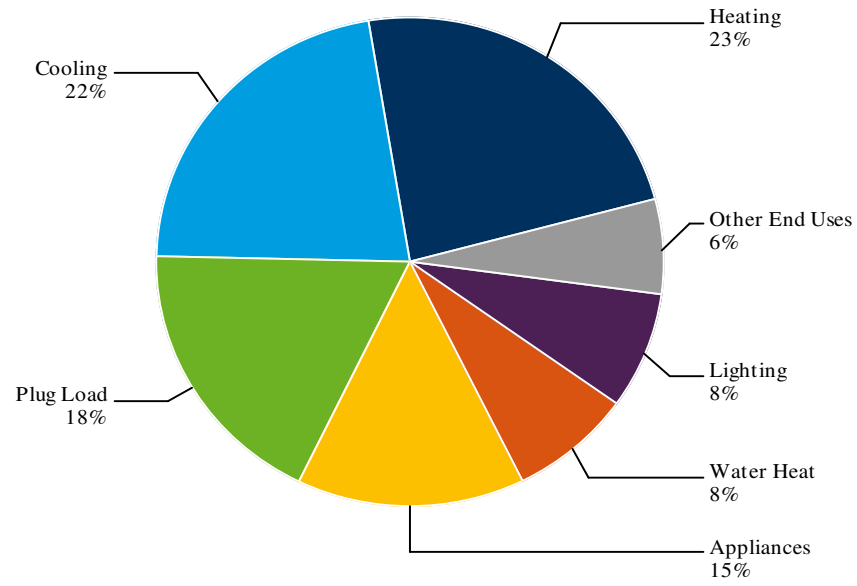
Total: 634 aMW



Note: 'Other End Uses' includes:
Water Heat: 4%, Cooking: 1%, Heat Pump: <1%, Pool Pump: <1%

Figure C-3B.48. Baseline Sales 2032 - Utah: Residential Multifamily by End Use

Total: 172 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 4%, Cooking: 2%

Figure C-3B.49. Baseline Sales 2032 - Utah: Residential Manufactured by End Use

Total: 14 aMW

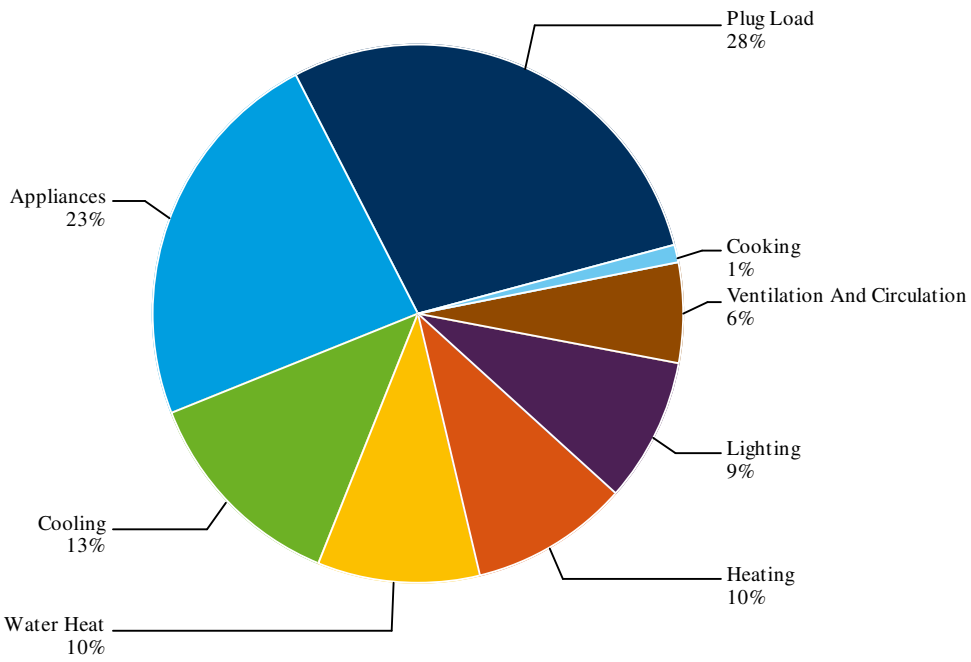
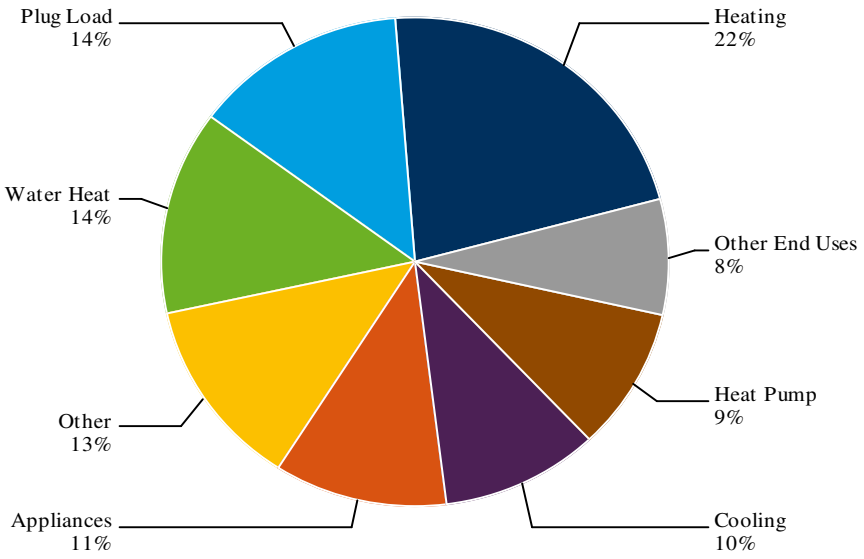


Figure C-3B.50. Baseline Sales 2032 - Washington: Residential Single Family by End Use

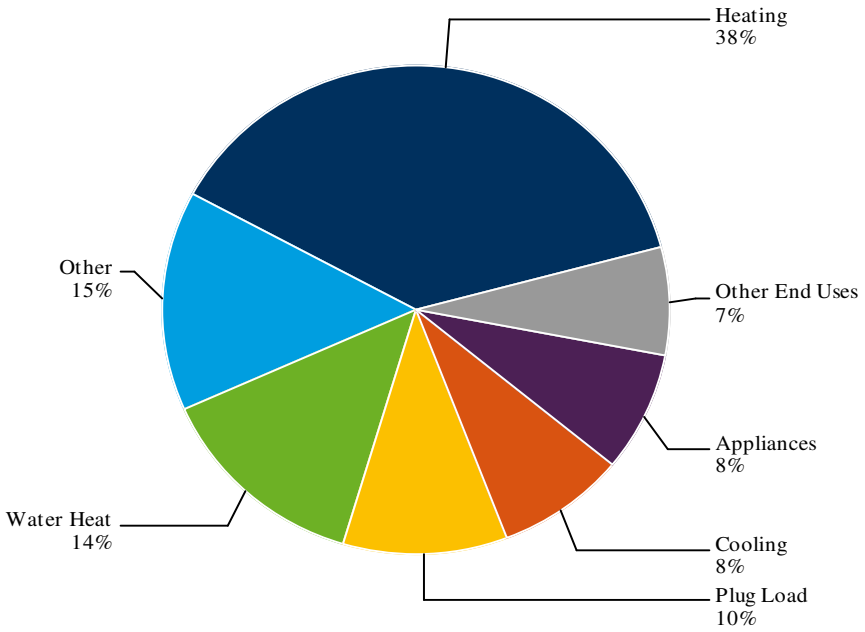
Total: 131 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Ventilation And Circulation: 2%, Cooking: <1%, Pool Pump: <1%

Figure C-3B.51. Baseline Sales 2032 - Washington: Residential Multifamily by End Use

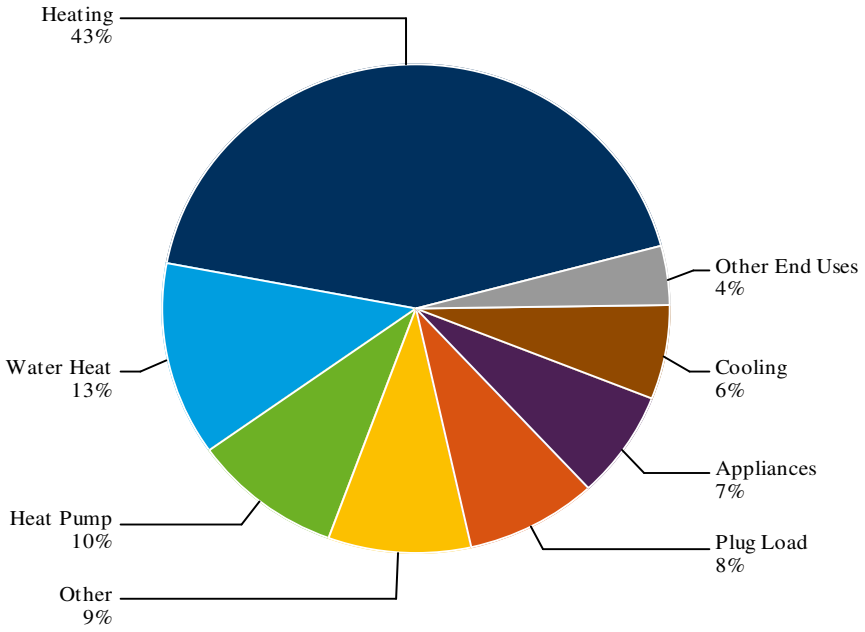
Total: 31 aMW



Note: 'Other End Uses' includes:
Lighting: 3%, Heat Pump: 2%, Ventilation And Circulation: 1%, Cooking: 1%

Figure C-3B.52. Baseline Sales 2032 - Washington: Residential Manufactured by End Use

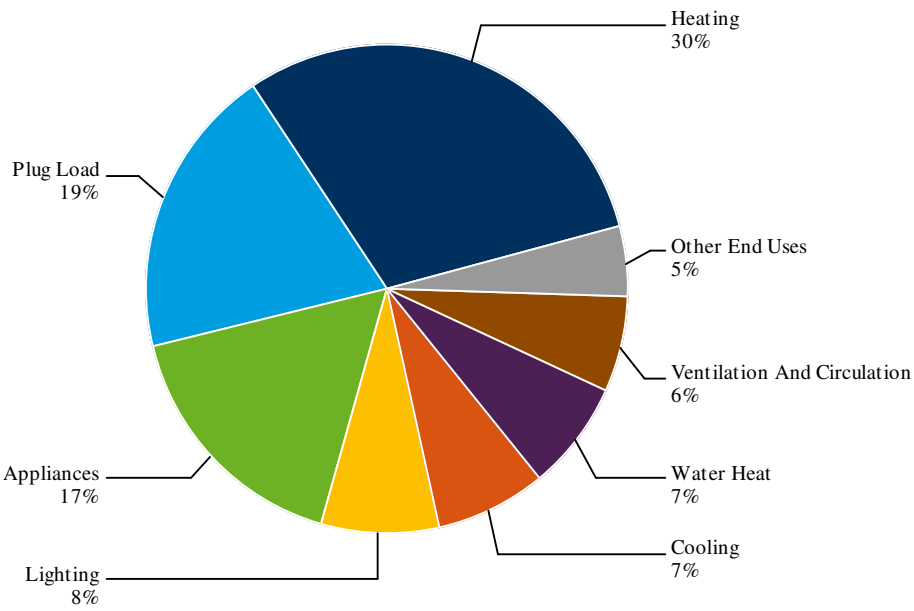
Total: 34 aMW



Note: 'Other End Uses' includes:
Lighting: 2%, Ventilation And Circulation: 1%, Cooking: <1%

Figure C-3B.53. Baseline Sales 2032 - Wyoming: Residential Single Family by End Use

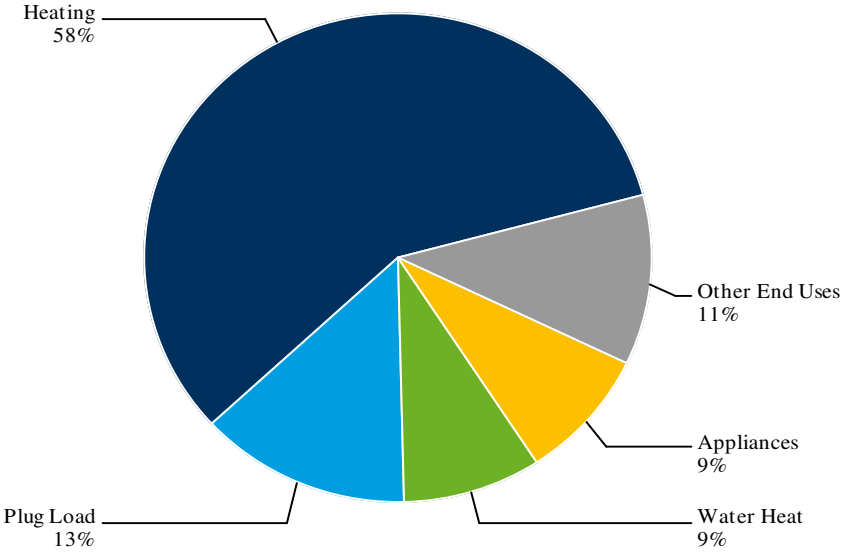
Total: 85 aMW



Note: 'Other End Uses' includes:
Heat Pump: 3%, Cooking: 1%, Pool Pump: <1%

Figure C-3B.54. Baseline Sales 2032 - Wyoming: Residential Multifamily by End Use

Total: 25 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Cooling: 3%, Ventilation And Circulation: 2%, Cooking: 1%

Figure C-3B.55. Baseline Sales 2032 - Wyoming: Residential Manufactured by End Use

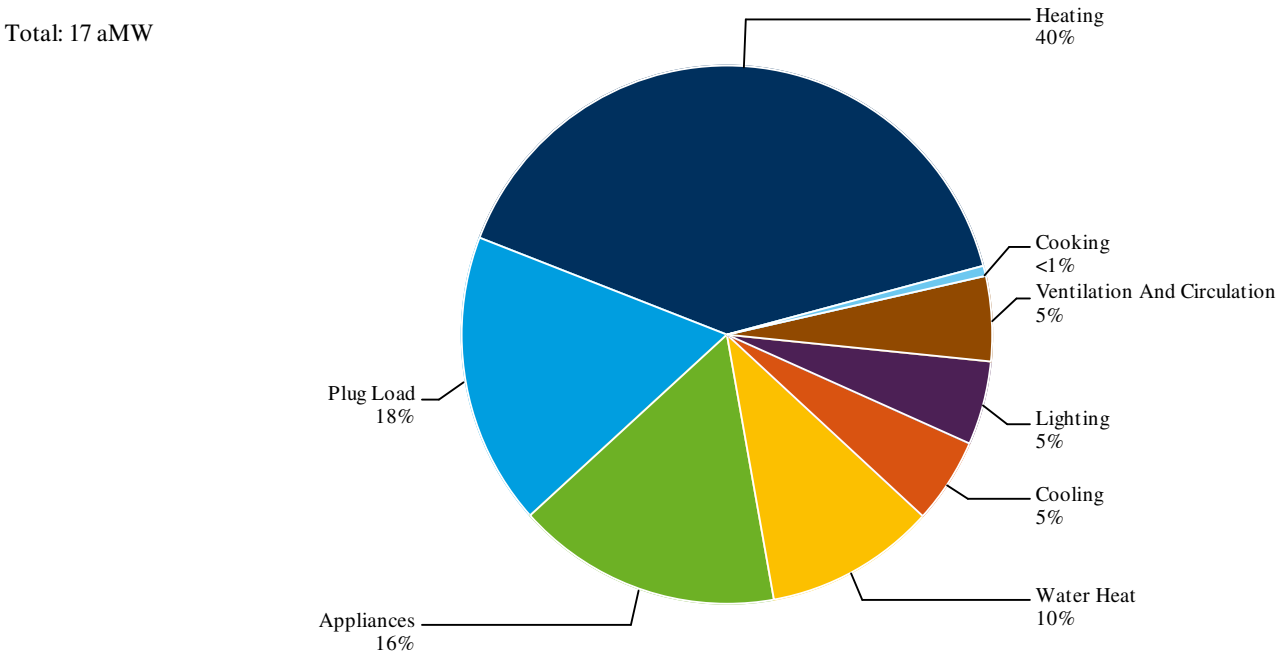
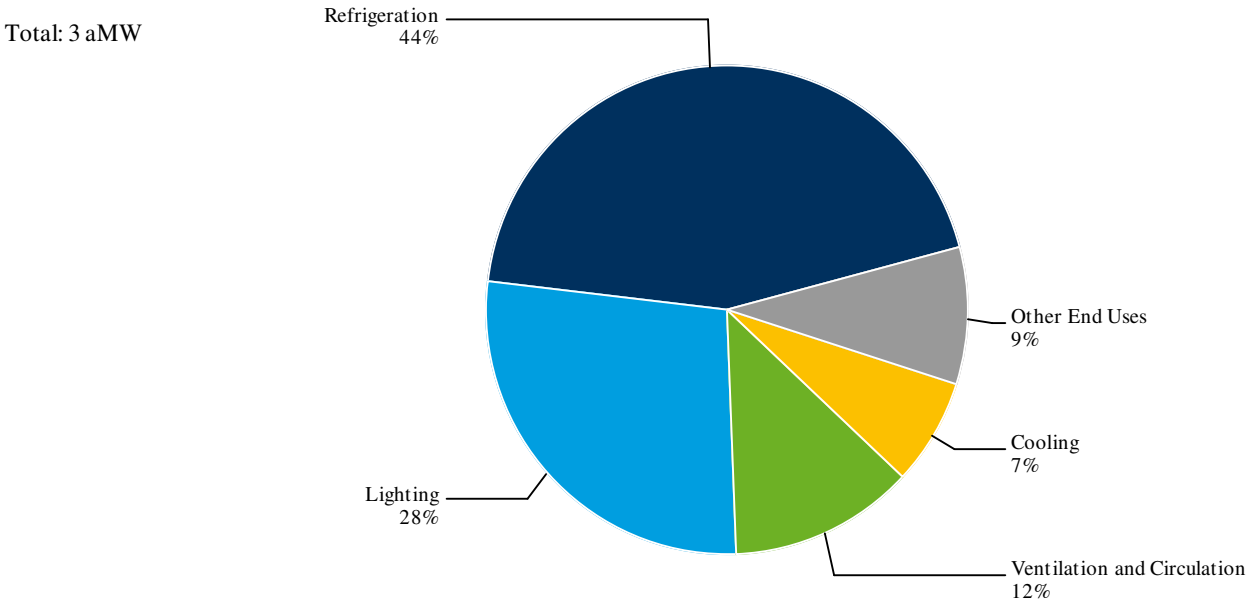
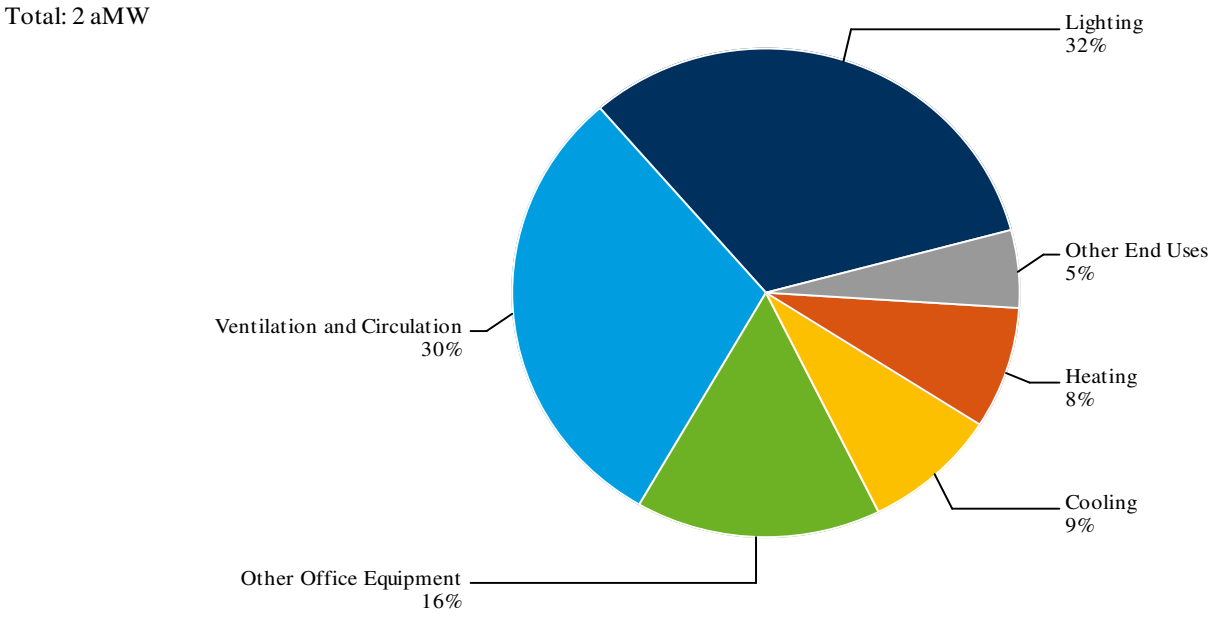


Figure C-3B.56. Baseline Sales 2032 - California: Commercial Grocery by End Use



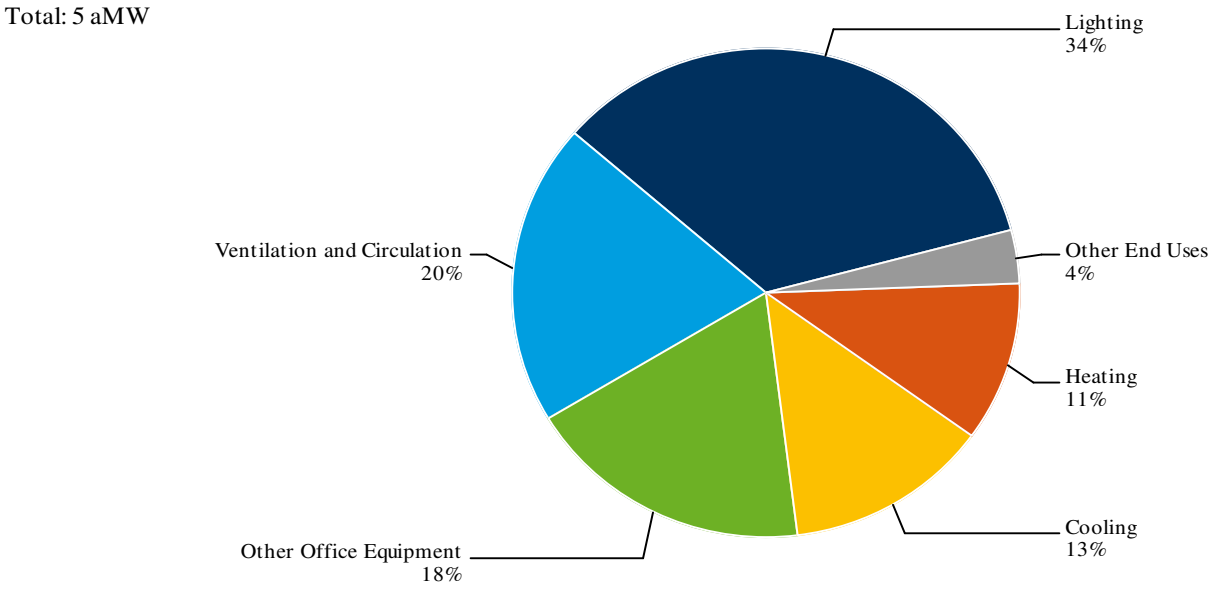
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heating: 3%, Heat Pump: 1%, Cooking: <1%, Water Heat: <1%, Appliances: <1%

Figure C-3B.57. Baseline Sales 2032 - California: Commercial Health by End Use



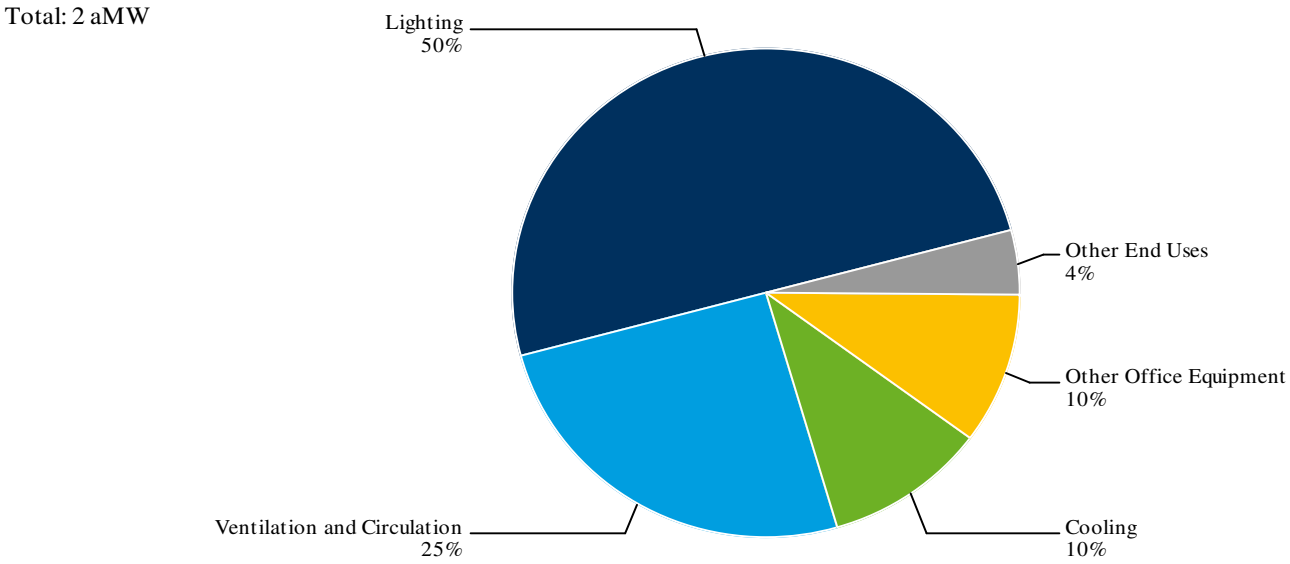
Note: 'Other End Uses' includes:
Water Heat: 2%, Heat Pump: 1%, Refrigeration: <1%, Appliances: <1%, Cooking: <1%

Figure C-3B.58. Baseline Sales 2032 - California: Commercial Office by End Use



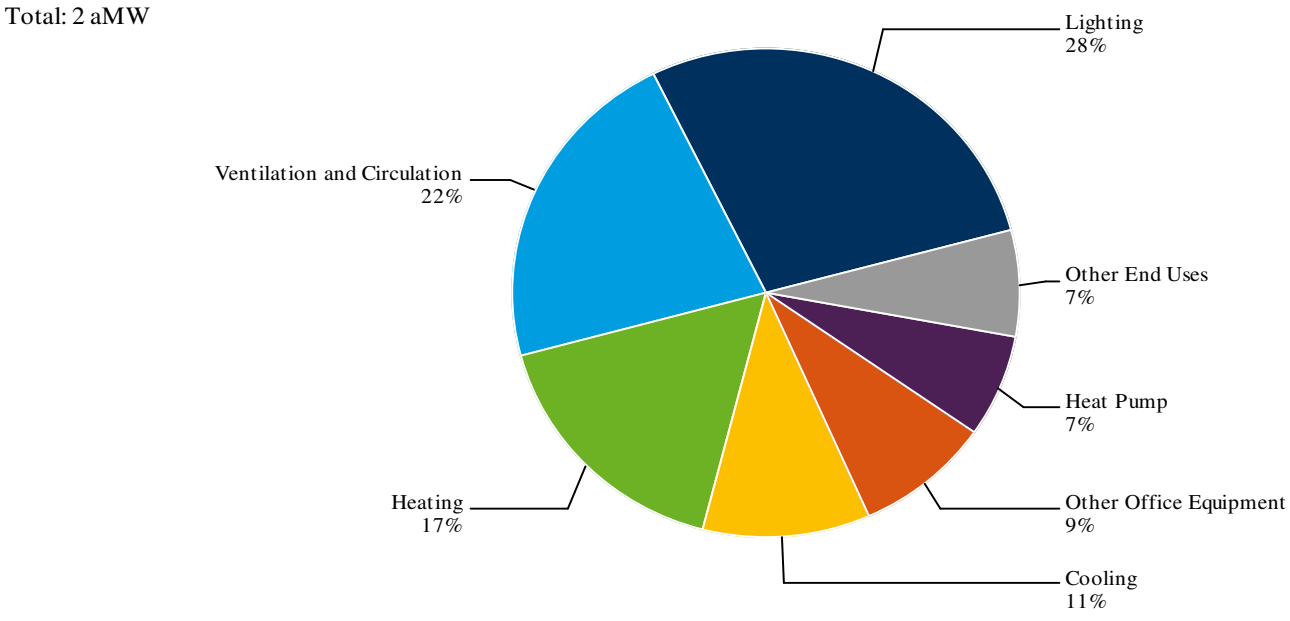
Note: 'Other End Uses' includes:
Water Heat: 3%, Appliances: <1%

Figure C-3B.59. Baseline Sales 2032 - California: Commercial Retail by End Use



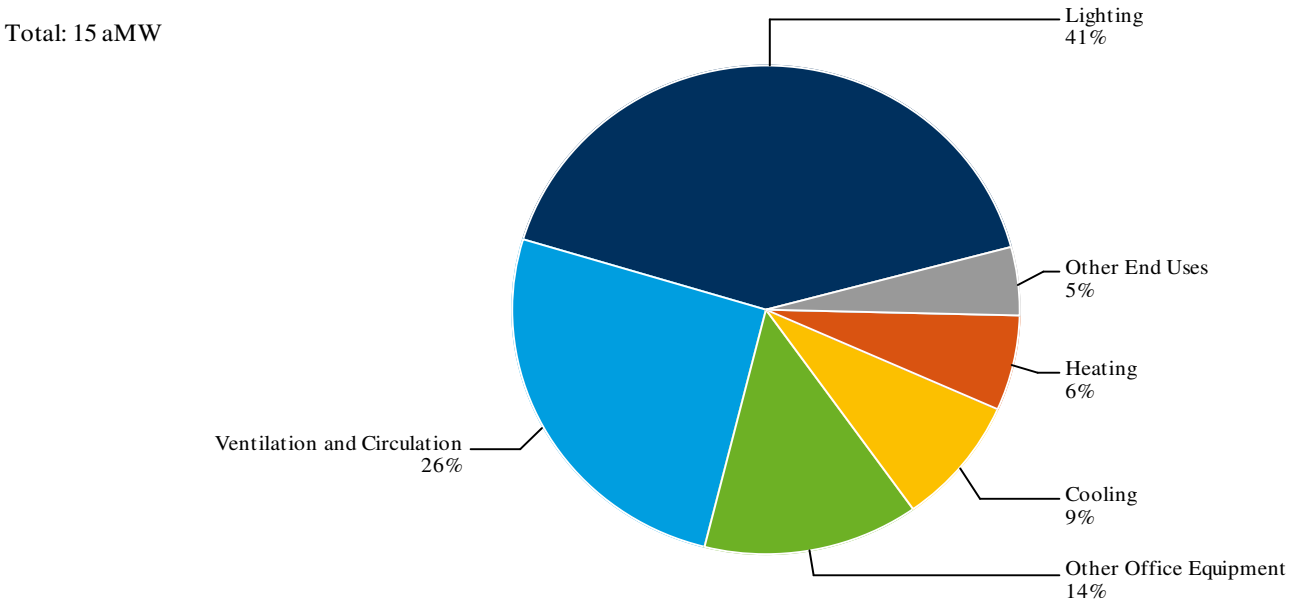
Note: 'Other End Uses' includes:
Heating: 3%, Water Heat: 1%, Appliances: <1%

Figure C-3B.60. Baseline Sales 2032 - California: Commercial Lodging by End Use



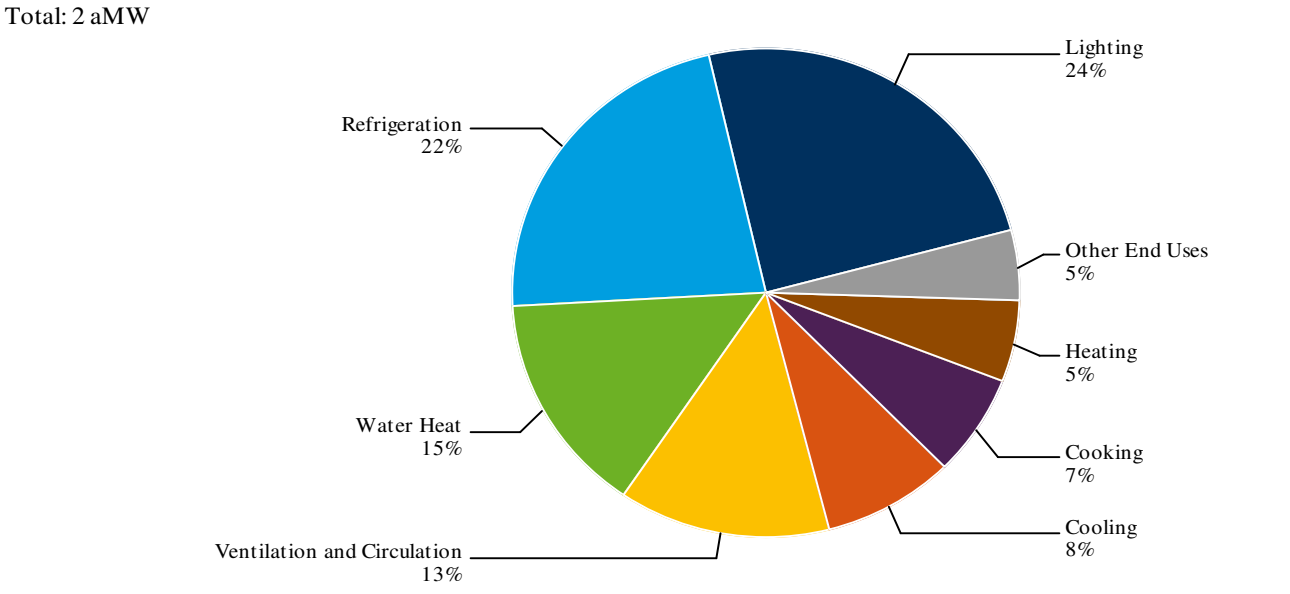
Note: 'Other End Uses' includes:
Water Heat: 4%, Appliances: 2%, Refrigeration: 1%, Cooking: <1%

Figure C-3B.61. **Baseline Sales 2032 - California: Commercial Miscellaneous by End Use**



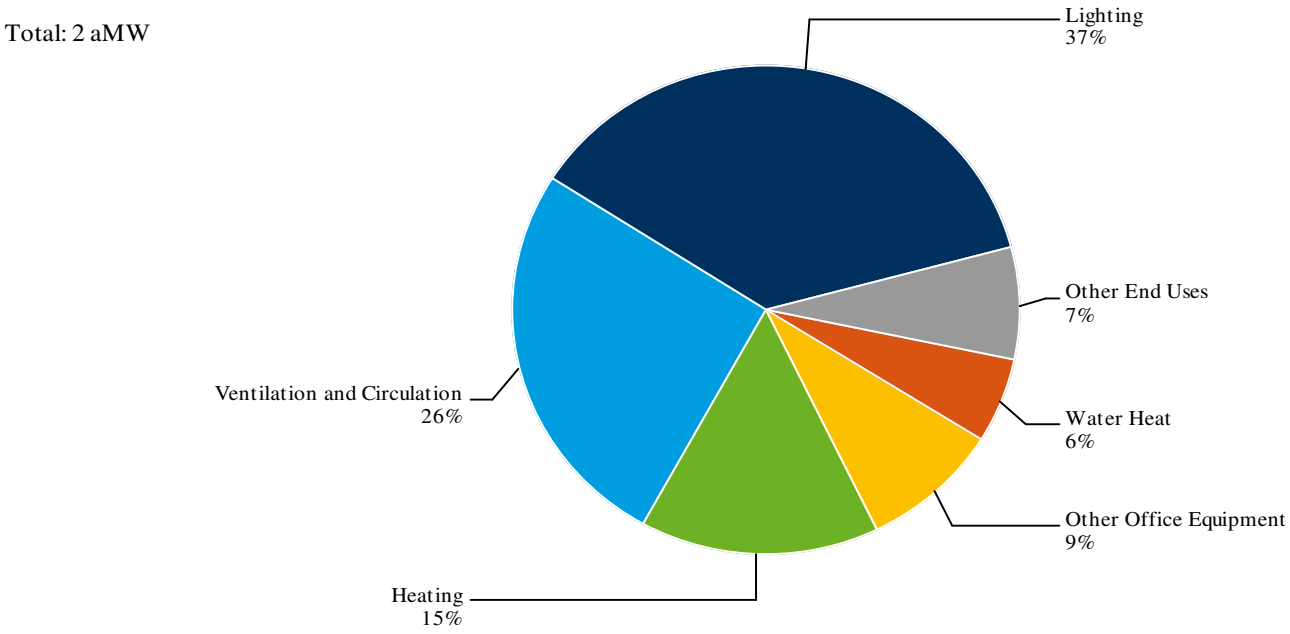
Note: 'Other End Uses' includes:
Water Heat: 2%, Heat Pump: <1%, Refrigeration: <1%, Appliances: <1%, Cooking: <1%

Figure C-3B.62. Baseline Sales 2032 - California: Commercial Restaurant by End Use



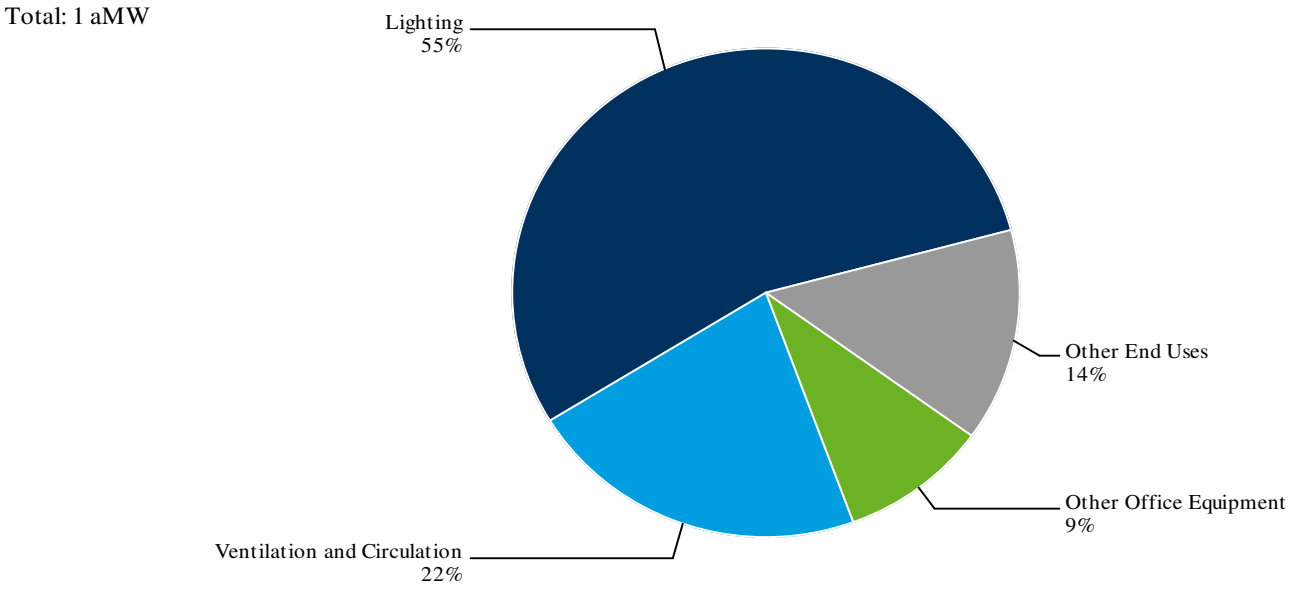
Note: 'Other End Uses' includes:
Other Office Equipment: 5%, Appliances: <1%

Figure C-3B.63. Baseline Sales 2032 - California: Commercial School by End Use



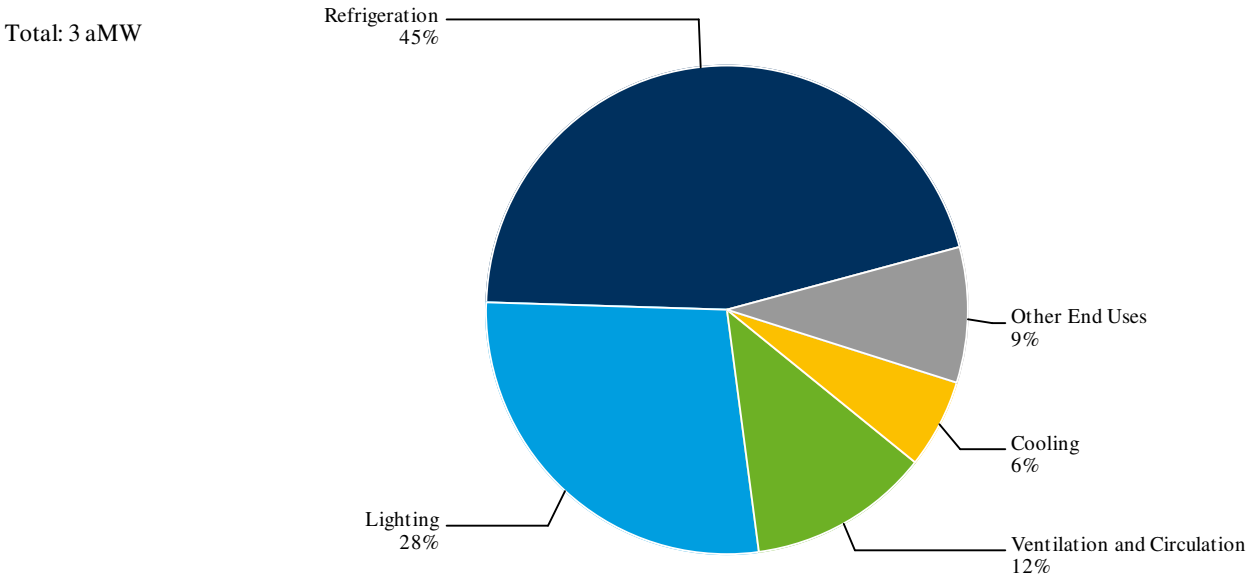
Note: 'Other End Uses' includes:
Cooling: 5%, Refrigeration: 1%, Cooking: <1%, Appliances: <1%

Figure C-3B.64. Baseline Sales 2032 - California: Commercial Warehouse by End Use



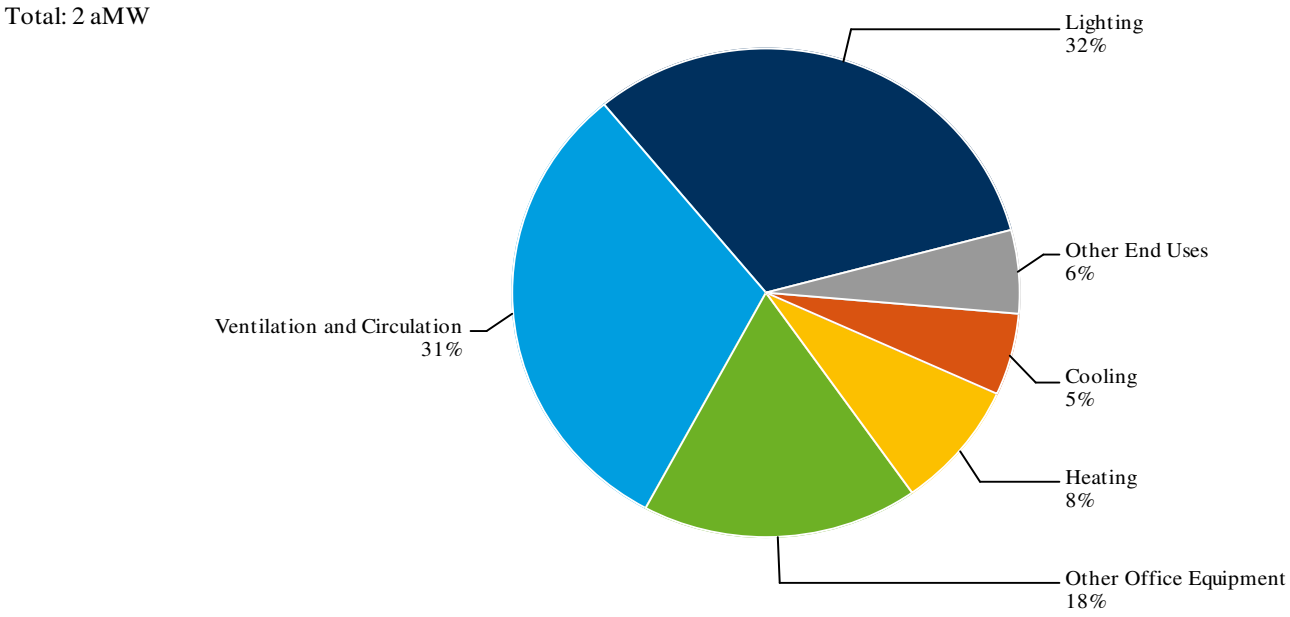
Note: 'Other End Uses' includes:
Cooling: 5%, Heating: 4%, Water Heat: 2%, Heat Pump: 2%, Appliances: <1%

Figure C-3B.65. Baseline Sales 2032 - Idaho: Commercial Grocery by End Use



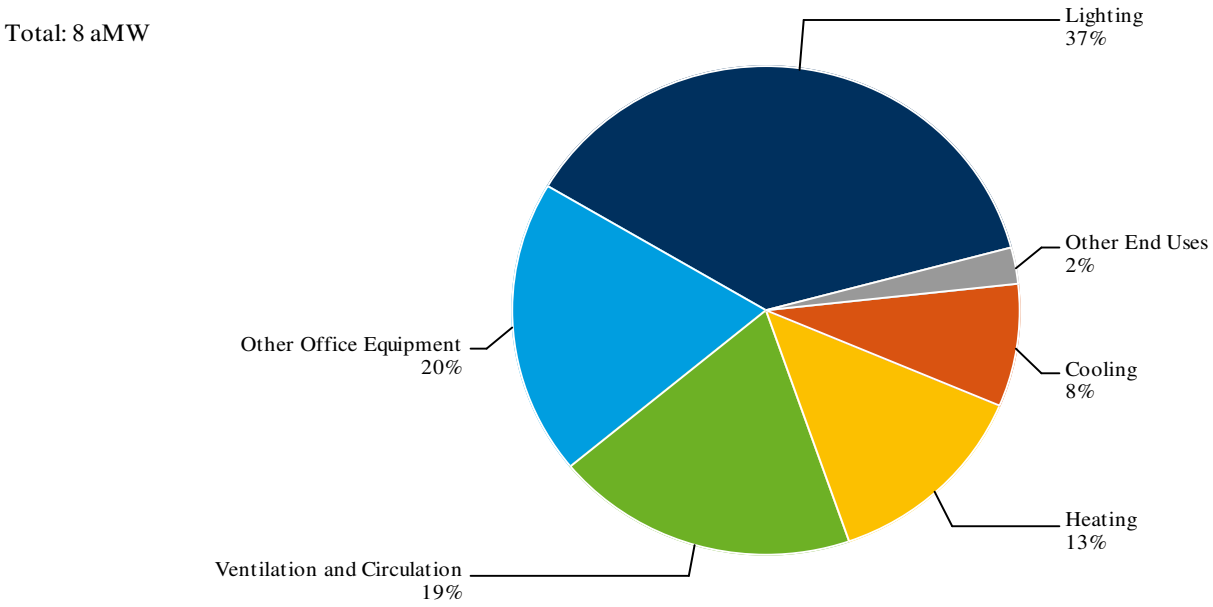
Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 3%, Heat Pump: <1%, Cooking: <1%, Water Heat: <1%, Appliances: <1%

Figure C-3B.66. Baseline Sales 2032 - Idaho: Commercial Health by End Use



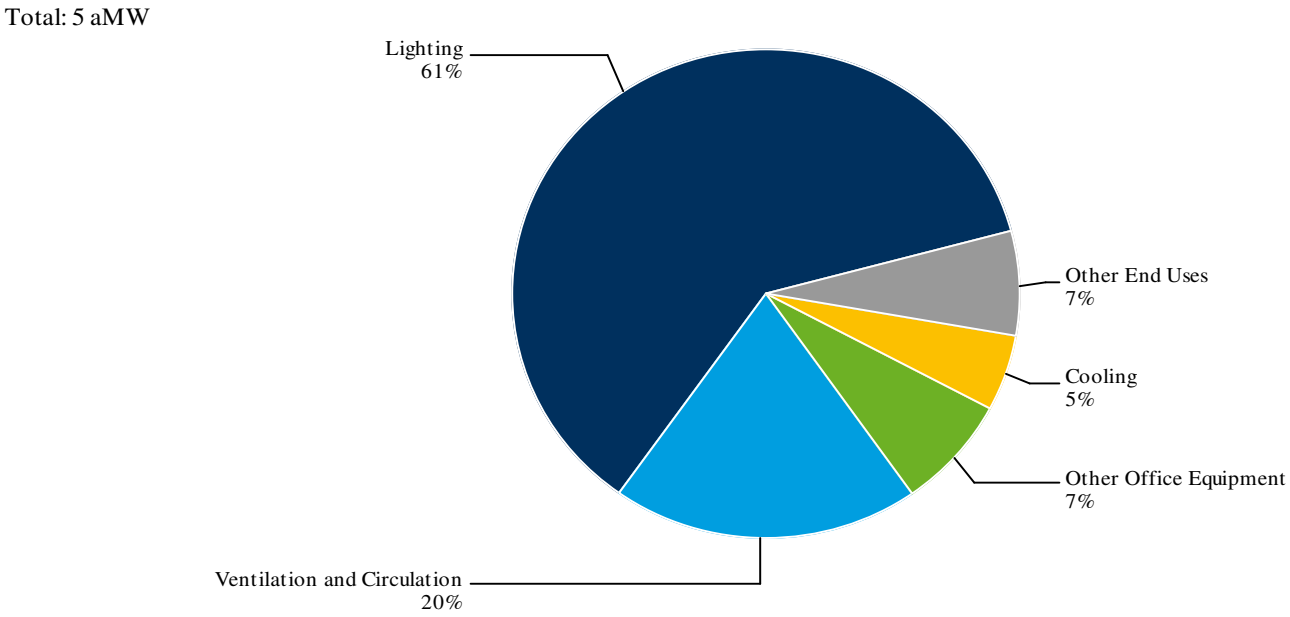
Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 1%, Refrigeration: <1%, Appliances: <1%, Cooking: <1%

Figure C-3B.67. Baseline Sales 2032 - Idaho: Commercial Office by End Use



Note: 'Other End Uses' includes:
Water Heat: 1%, Heat Pump: <1%, Appliances: <1%

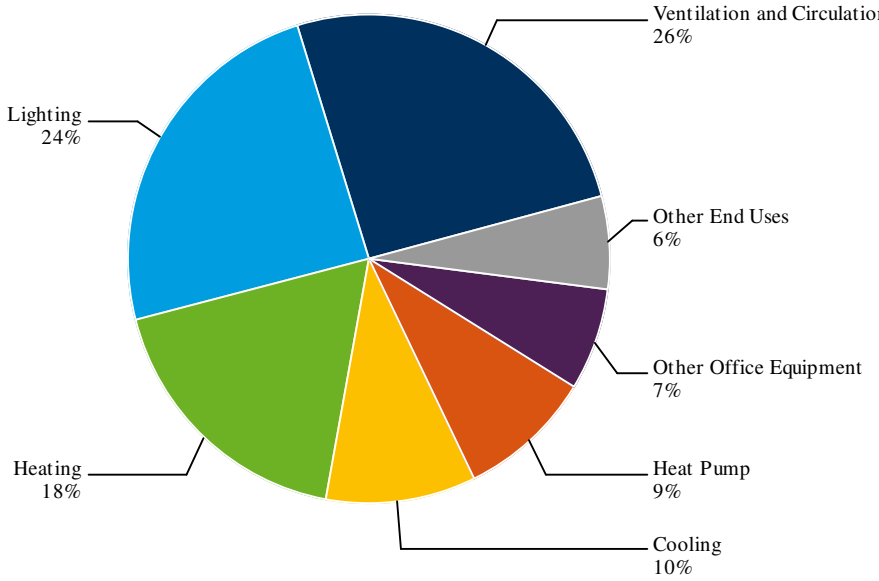
Figure C-3B.68. Baseline Sales 2032 - Idaho: Commercial Retail by End Use



Note: 'Other End Uses' includes:
Heating: 4%, Heat Pump: 2%, Water Heat: <1%, Appliances: <1%

Figure C-3B.69. Baseline Sales 2032 - Idaho: Commercial Lodging by End Use

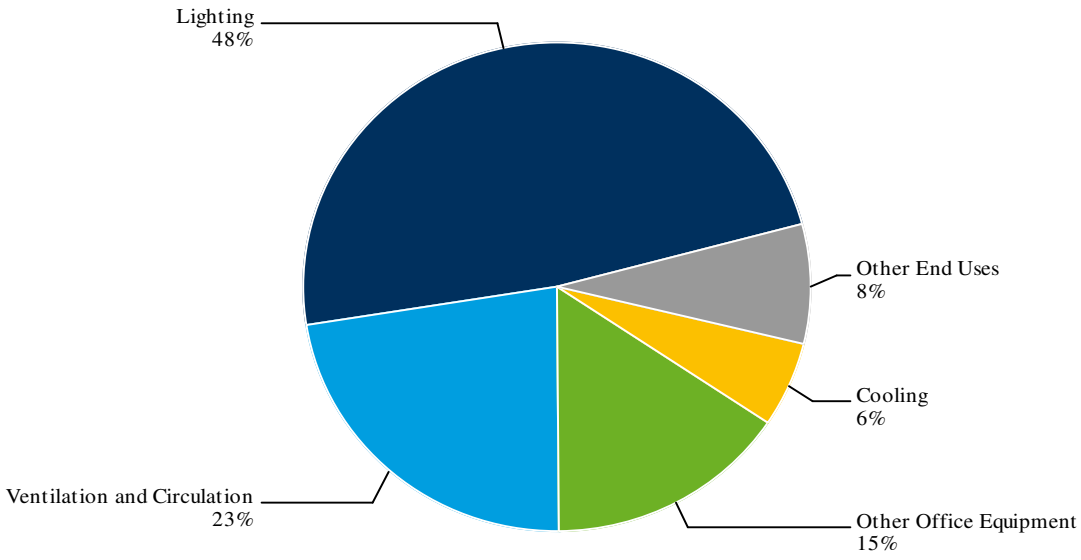
Total: 1 aMW



Note: 'Other End Uses' includes:
Water Heat: 4%, Refrigeration: 1%, Appliances: <1%, Cooking: <1%

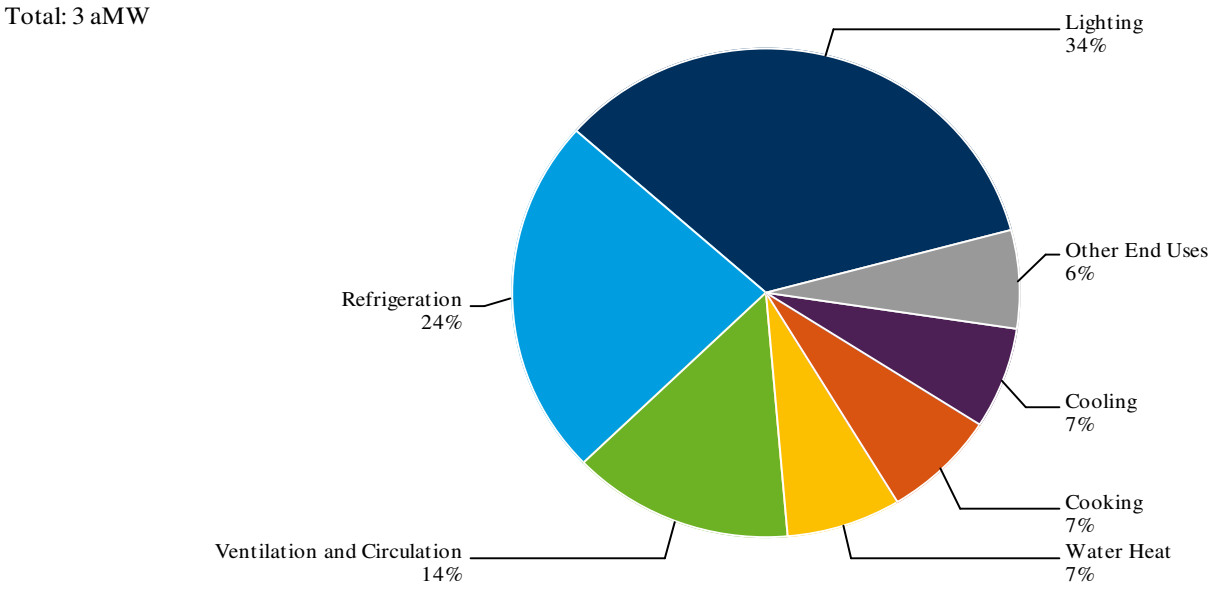
Figure C-3B.70. Baseline Sales 2032 - Idaho: Commercial Miscellaneous by End Use

Total: 23 aMW



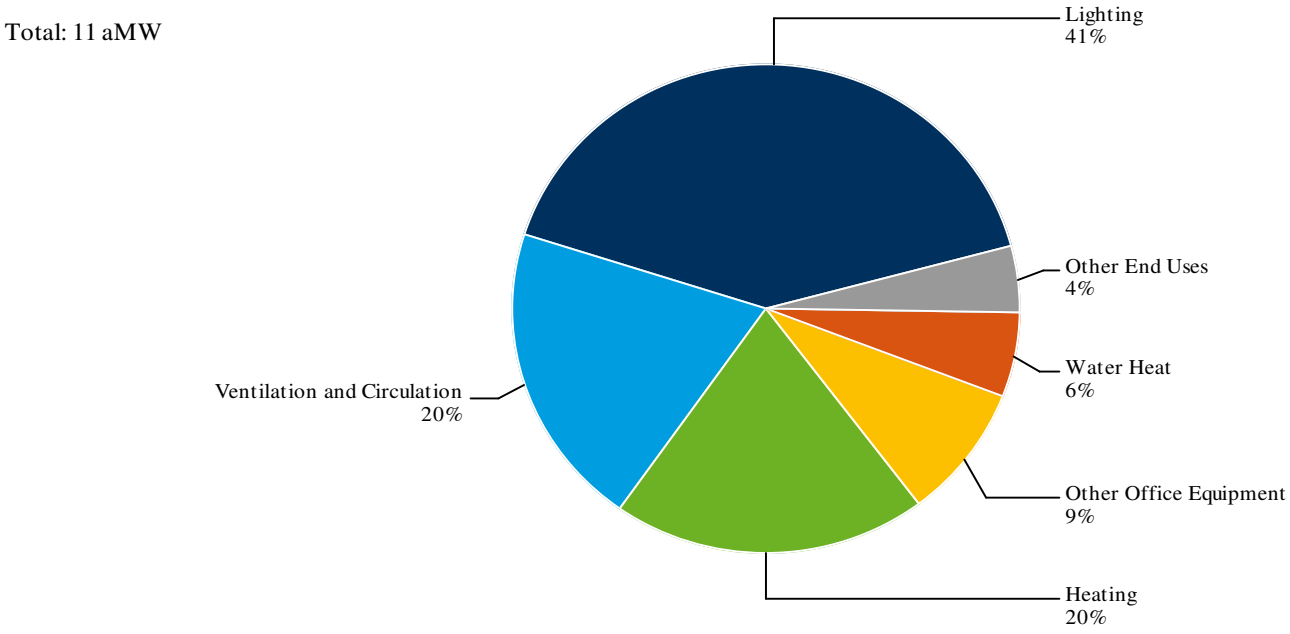
Note: 'Other End Uses' includes:
Heating: 4%, Water Heat: 2%, Heat Pump: 1%, Refrigeration: <1%, Appliances: <1%, Cooking: <1%

Figure C-3B.71. Baseline Sales 2032 - Idaho: Commercial Restaurant by End Use



Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heating: 1%, Appliances: 1%

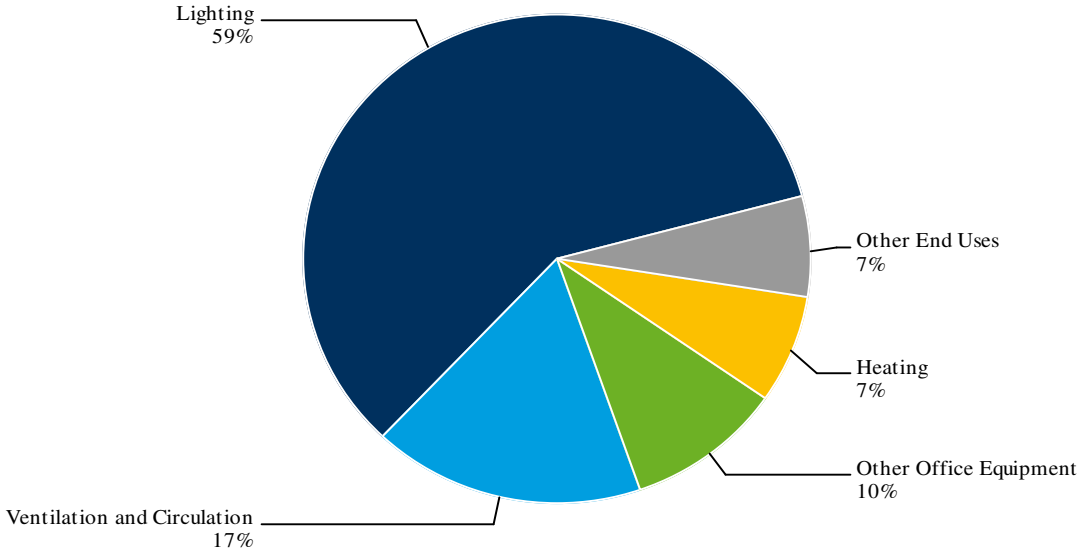
Figure C-3B.72. Baseline Sales 2032 - Idaho: Commercial School by End Use



Note: 'Other End Uses' includes:
Cooling: 2%, Refrigeration: 1%, Cooking: <1%, Appliances: <1%

Figure C-3B.73. Baseline Sales 2032 - Idaho: Commercial Warehouse by End Use

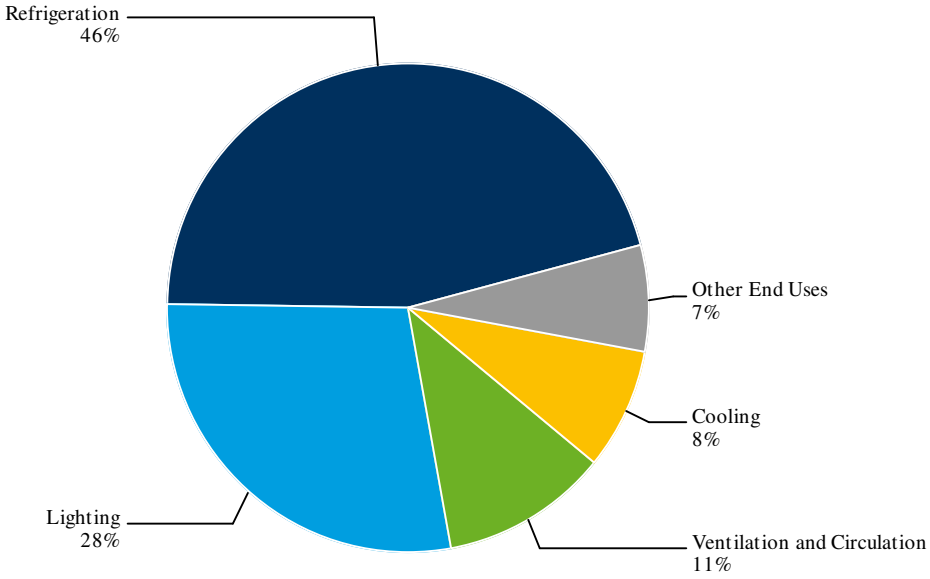
Total: 4 aMW



Note: 'Other End Uses' includes:
Cooling: 2%, Water Heat: 2%, Heat Pump: 2%, Appliances: <1%

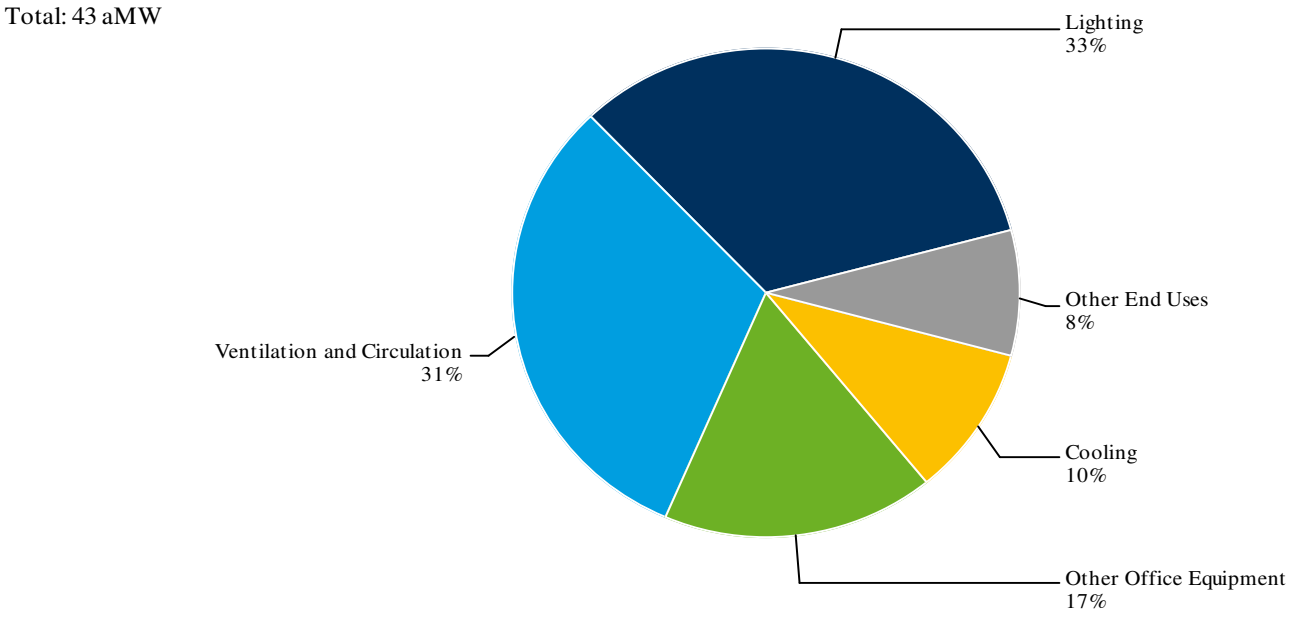
Figure C-3B.74. Baseline Sales 2032 - Utah: Commercial Grocery by End Use

Total: 41 aMW



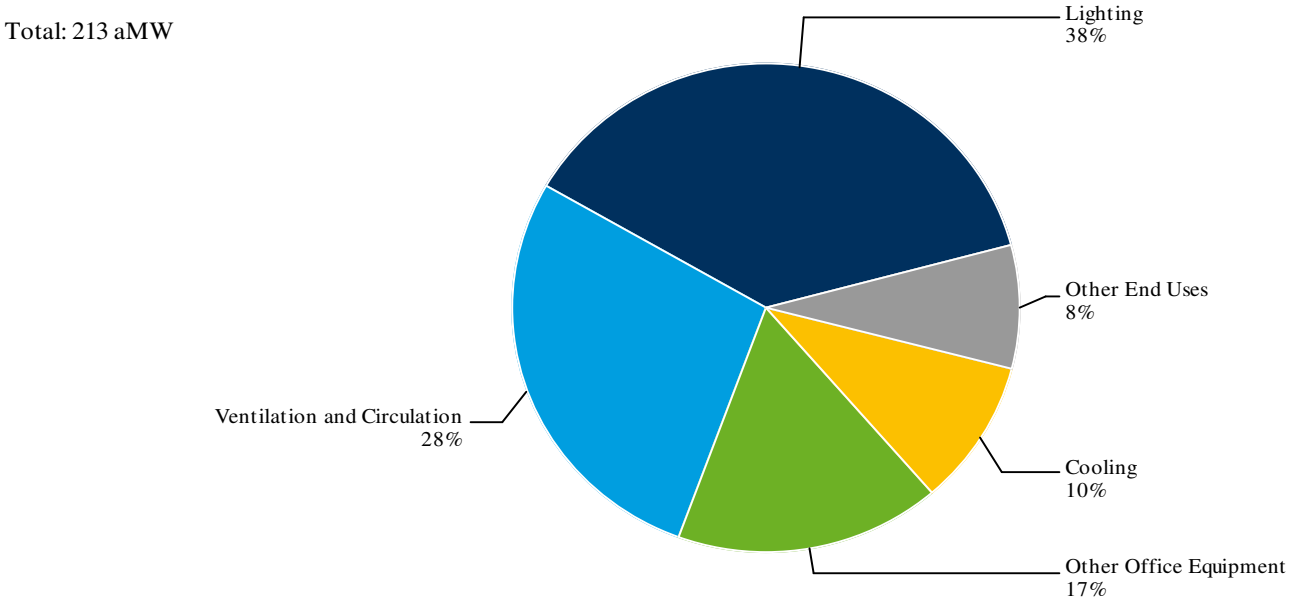
Note: 'Other End Uses' includes:
Other Office Equipment: 3%, Heating: 2%, Heat Pump: <1%, Cooking: <1%, Appliances: <1%, Water Heat: <1%

Figure C-3B.75. Baseline Sales 2032 - Utah: Commercial Health by End Use



Note: 'Other End Uses' includes:
Heating: 5%, Heat Pump: 1%, Refrigeration: 1%, Water Heat: <1%, Appliances: <1%, Cooking: <1%

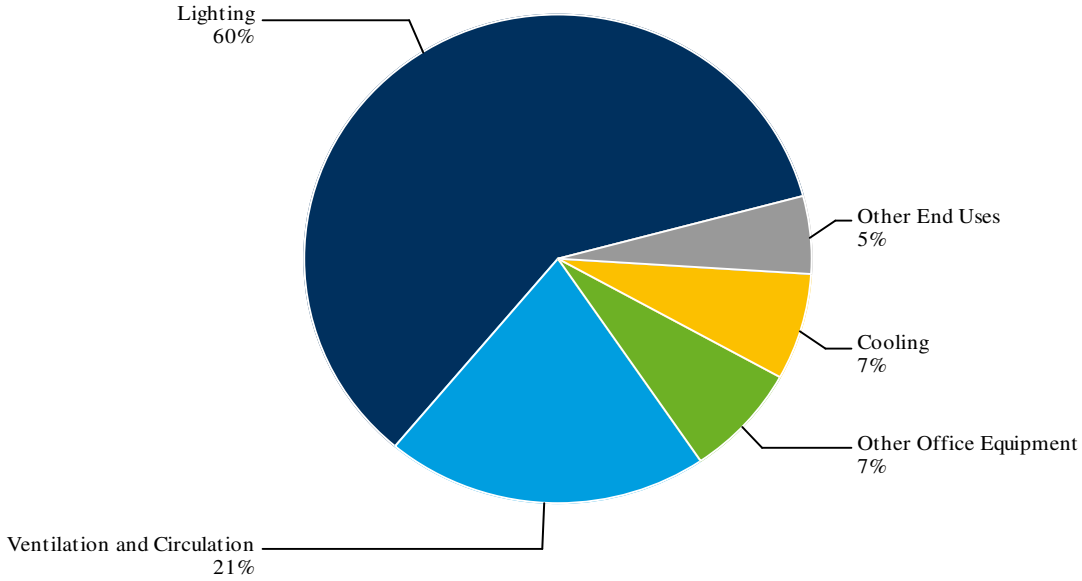
Figure C-3B.76. Baseline Sales 2032 - Utah: Commercial Office by End Use



Note: 'Other End Uses' includes:
Heating: 4%, Heat Pump: 3%, Water Heat: <1%, Appliances: <1%

Figure C-3B.77. Baseline Sales 2032 - Utah: Commercial Retail by End Use

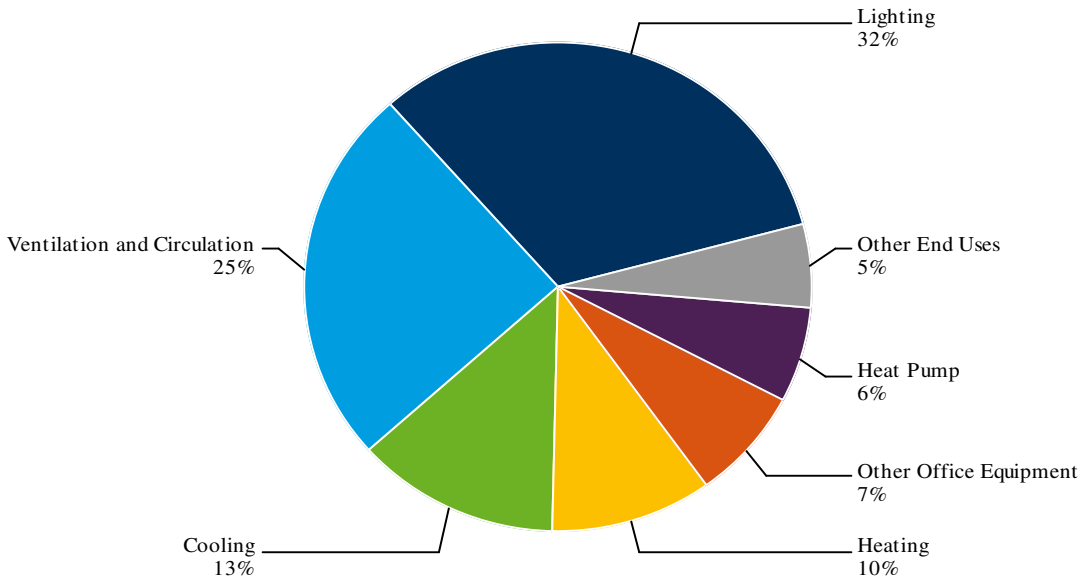
Total: 123 aMW



Note: 'Other End Uses' includes:
Heat Pump: 2%, Heating: 2%, Water Heat: <1%, Appliances: <1%

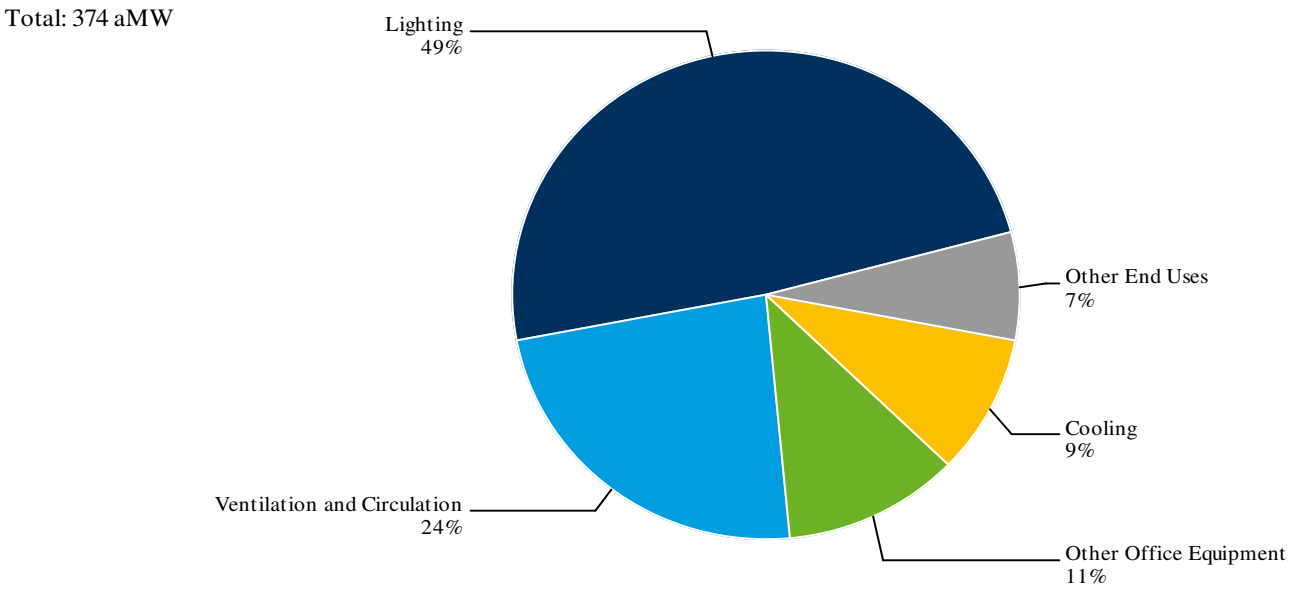
Figure C-3B.78. Baseline Sales 2032 - Utah: Commercial Lodging by End Use

Total: 31 aMW



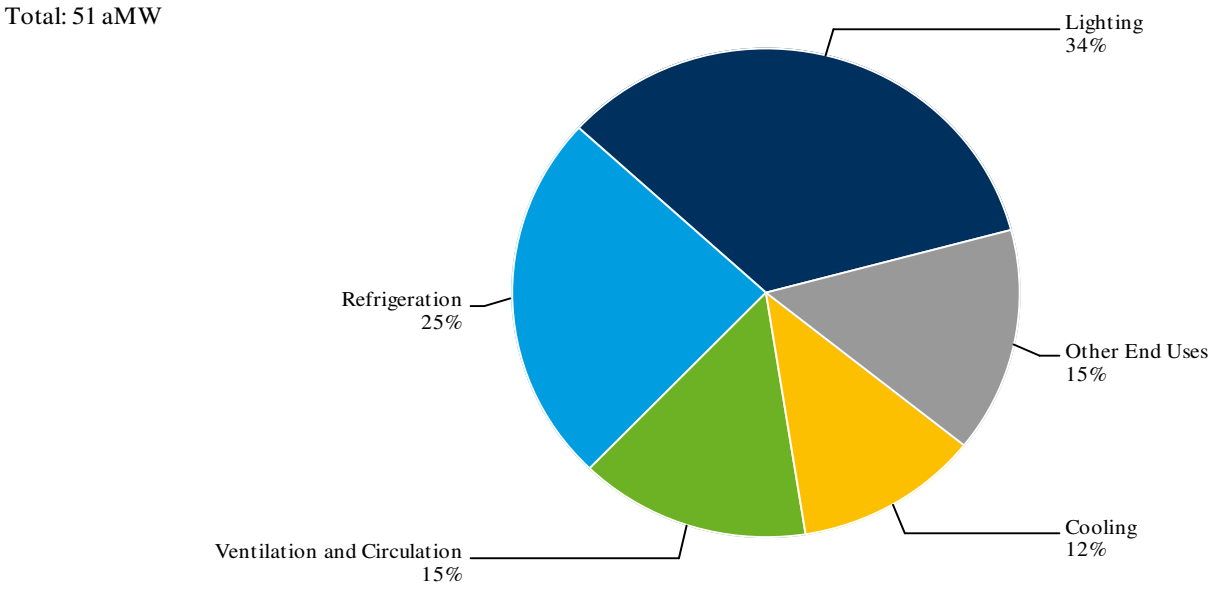
Note: 'Other End Uses' includes:
Water Heat: 2%, Refrigeration: 2%, Appliances: 1%, Cooking: <1%

Figure C-3B.79. Baseline Sales 2032 - Utah: Commercial Miscellaneous by End Use



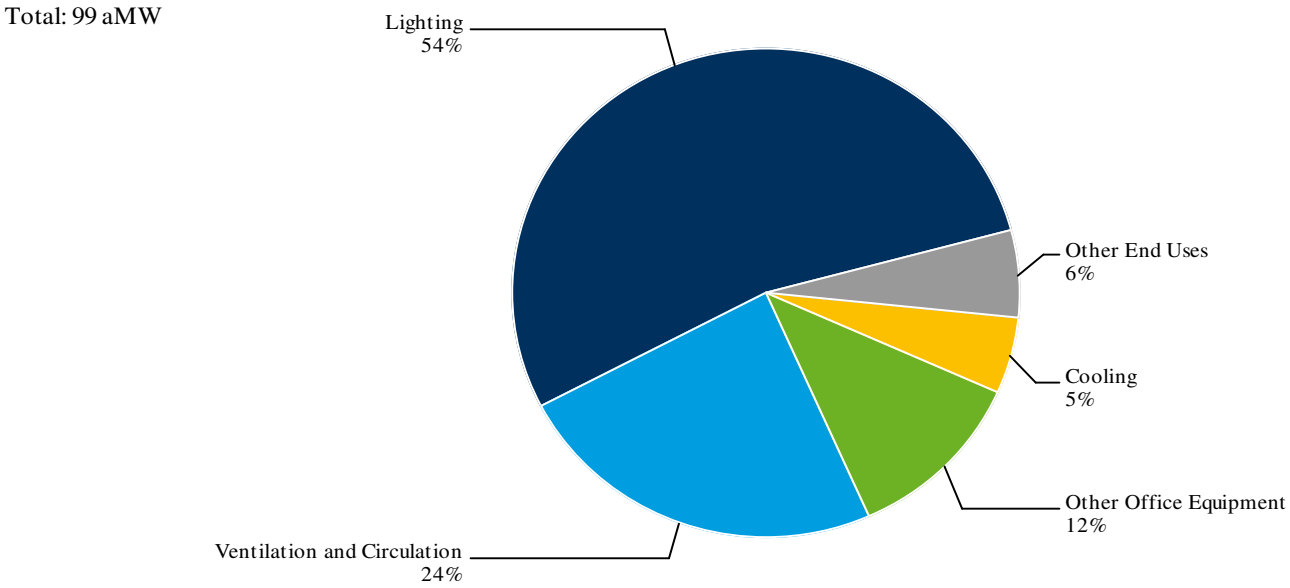
Note: 'Other End Uses' includes:
Heating: 4%, Heat Pump: 1%, Refrigeration: <1%, Water Heat: <1%, Appliances: <1%, Cooking: <1%

Figure C-3B.80.**Baseline Sales 2032 - Utah: Commercial Restaurant by End Use**



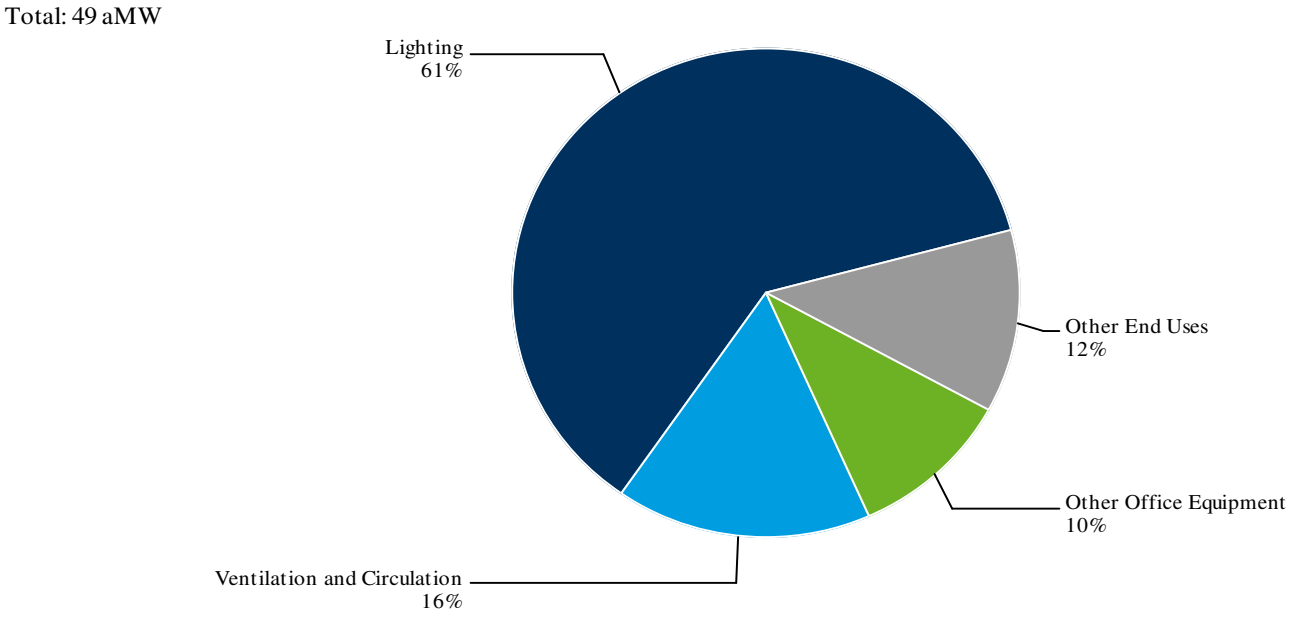
Note: 'Other End Uses' includes:
Water Heat: 4%, Other Office Equipment: 4%, Heating: 3%, Cooking: 2%, Appliances: 1%

Figure C-3B.81. Baseline Sales 2032 - Utah: Commercial School by End Use



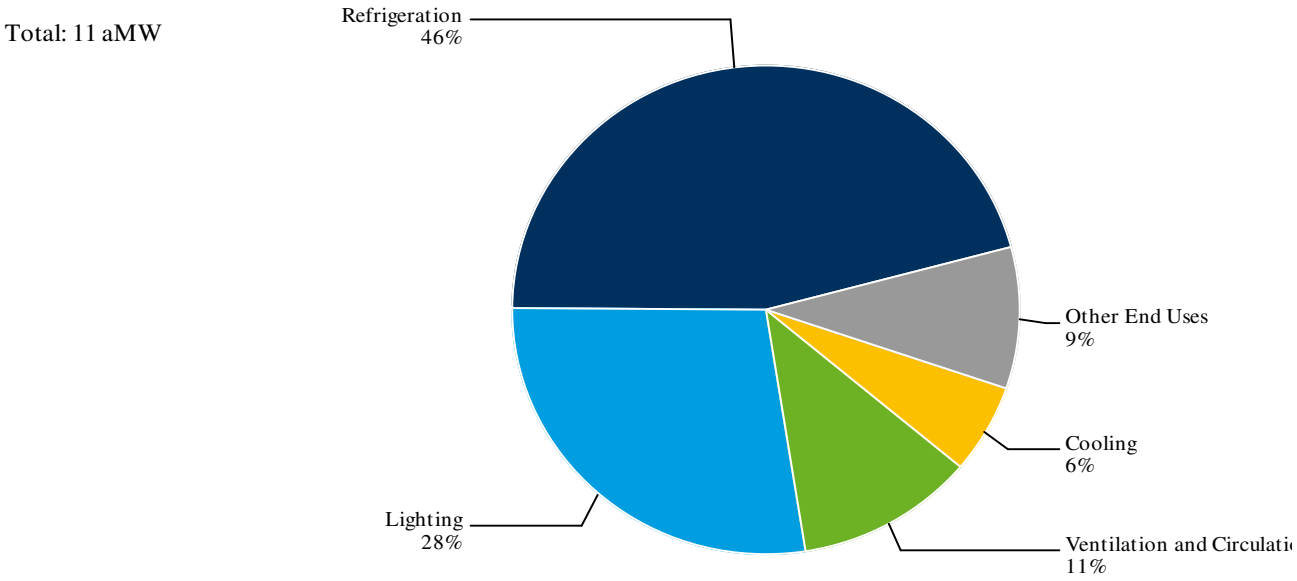
Note: 'Other End Uses' includes:
Water Heat: 3%, Refrigeration: 2%, Cooking: <1%, Appliances: <1%

Figure C-3B.82. Baseline Sales 2032 - Utah: Commercial Warehouse by End Use



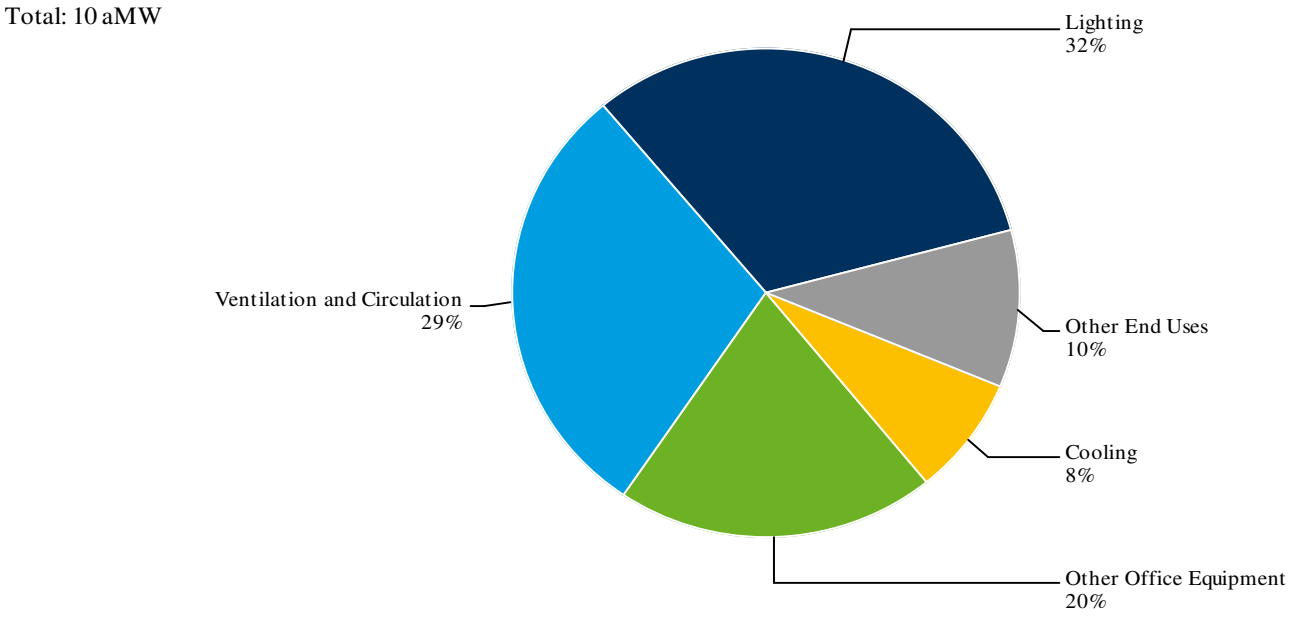
Note: 'Other End Uses' includes:
Cooling: 4%, Heating: 4%, Water Heat: 2%, Heat Pump: 2%, Appliances: <1%

Figure C-3B.83. Baseline Sales 2032 - Washington: Commercial Grocery by End Use



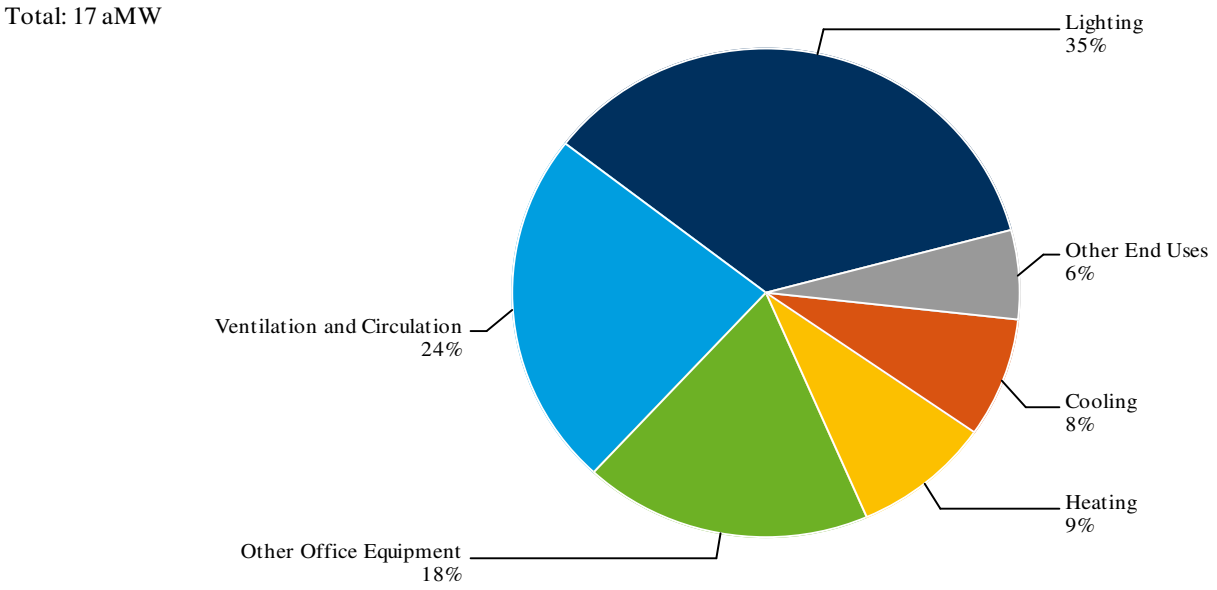
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heating: 3%, Heat Pump: 1%, Cooking: <1%, Water Heat: <1%, Appliances: <1%

Figure C-3B.84. Baseline Sales 2032 - Washington: Commercial Health by End Use



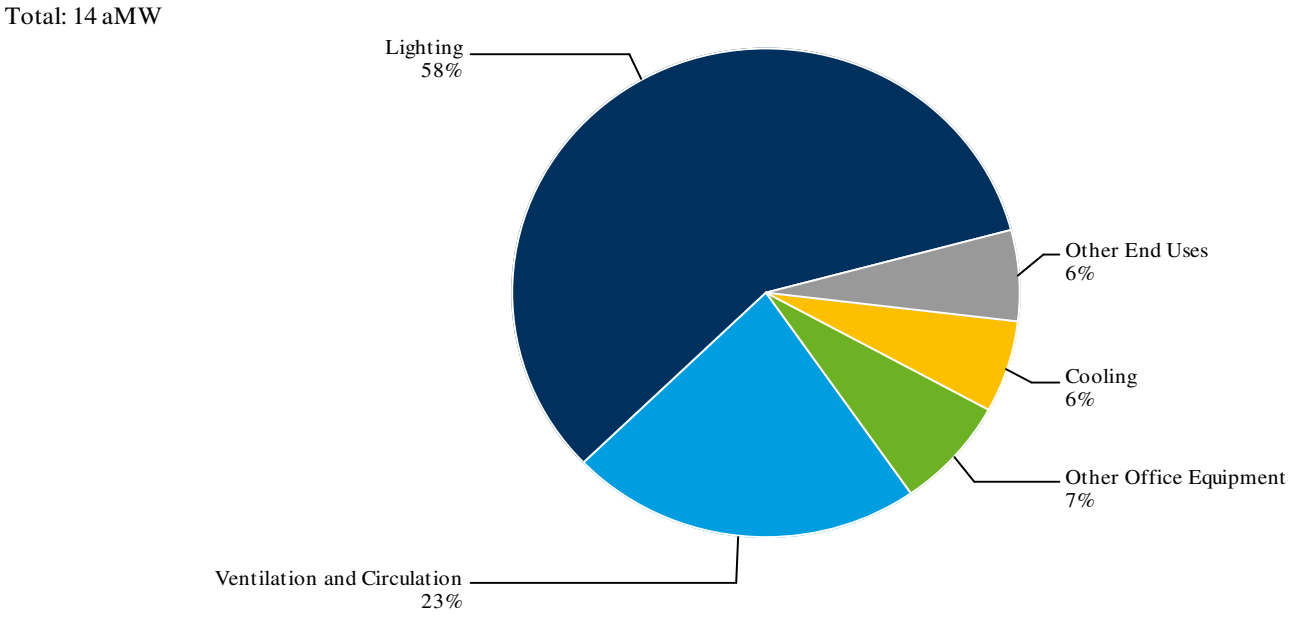
Note: 'Other End Uses' includes:
Heating: 5%, Water Heat: 3%, Heat Pump: 1%, Refrigeration: 1%, Appliances: <1%, Cooking: <1%

Figure C-3B.85. Baseline Sales 2032 - Washington: Commercial Office by End Use



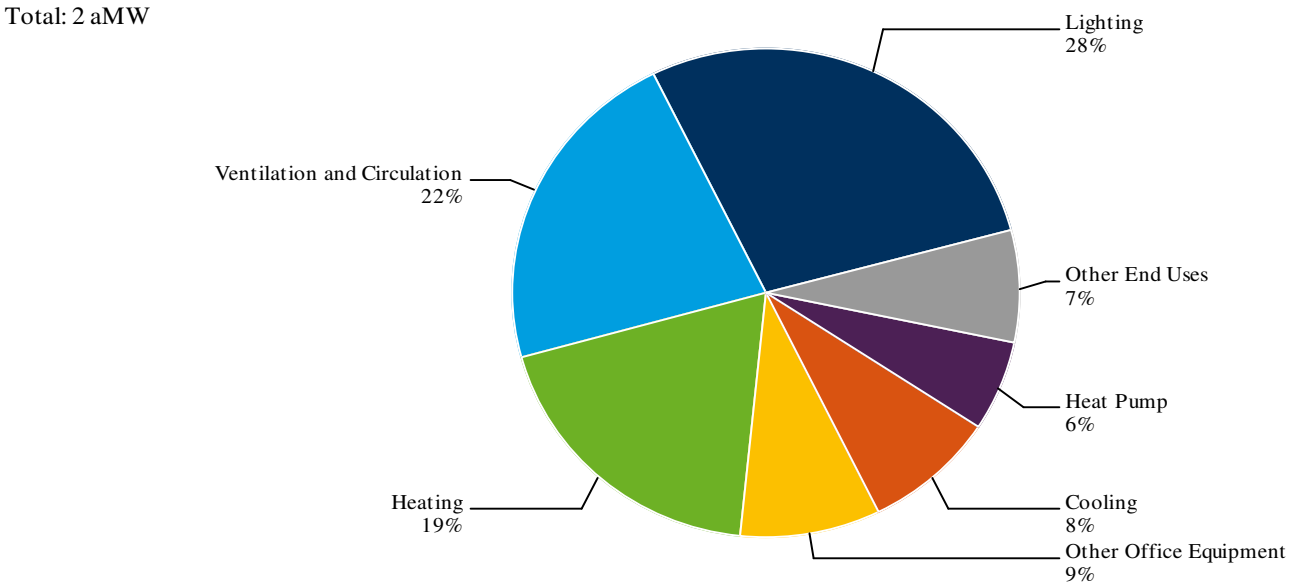
Note: 'Other End Uses' includes:
Heat Pump: 4%, Water Heat: 2%, Appliances: <1%

Figure C-3B.86. Baseline Sales 2032 - Washington: Commercial Retail by End Use



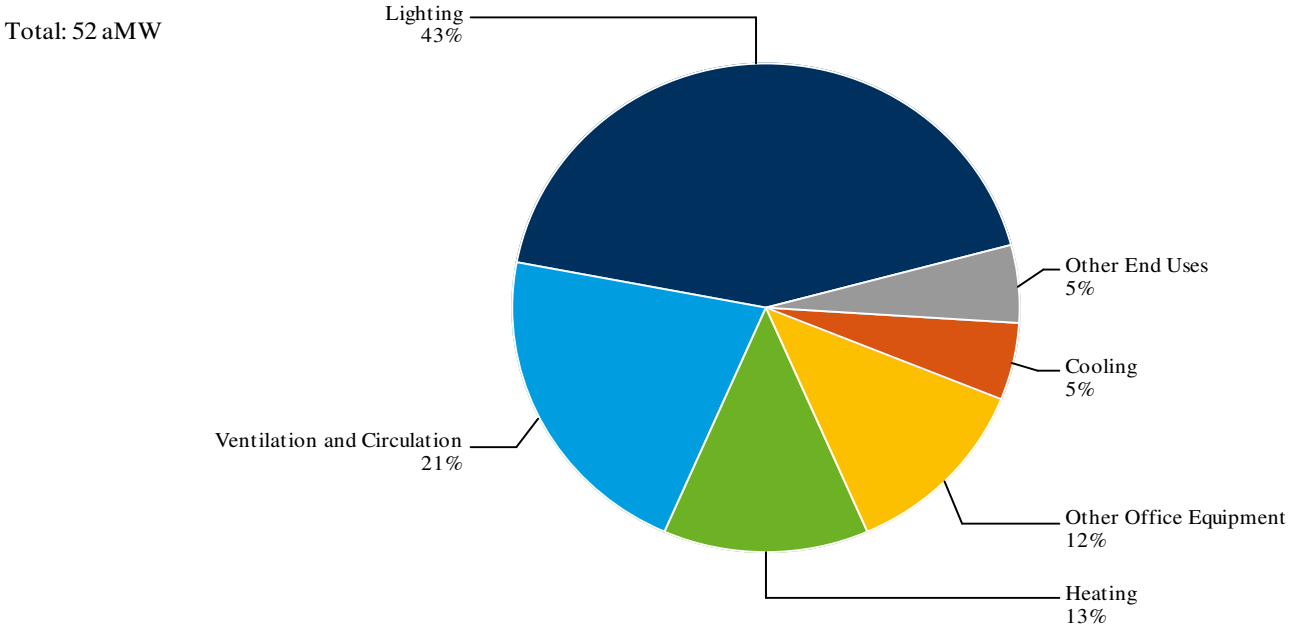
Note: 'Other End Uses' includes:
Heating: 3%, Heat Pump: 2%, Water Heat: <1%, Appliances: <1%

Figure C-3B.87. Baseline Sales 2032 - Washington: Commercial Lodging by End Use



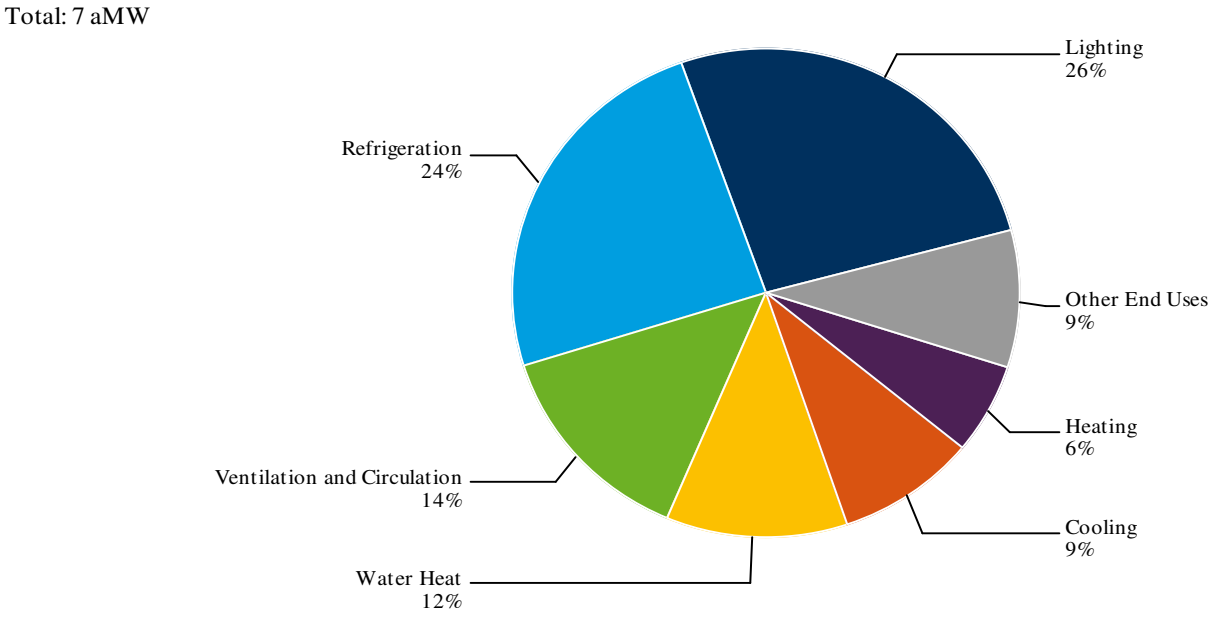
Note: 'Other End Uses' includes:
Water Heat: 5%, Appliances: 2%, Refrigeration: 1%, Cooking: <1%

Figure C-3B.88. Baseline Sales 2032 - Washington: Commercial Miscellaneous by End Use



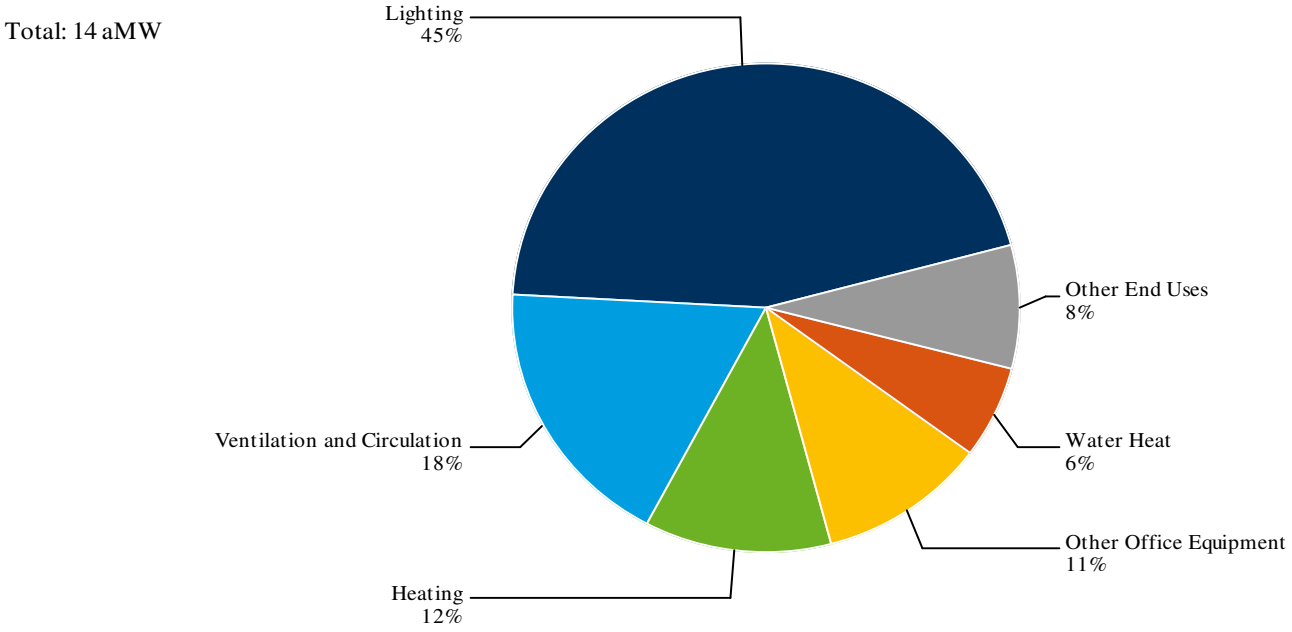
Note: 'Other End Uses' includes:
Water Heat: 2%, Heat Pump: 2%, Refrigeration: 1%, Appliances: <1%, Cooking: <1%

Figure C-3B.89. Baseline Sales 2032 - Washington: Commercial Restaurant by End Use



Note: 'Other End Uses' includes:
Other Office Equipment: 5%, Cooking: 3%, Heat Pump: <1%, Appliances: <1%

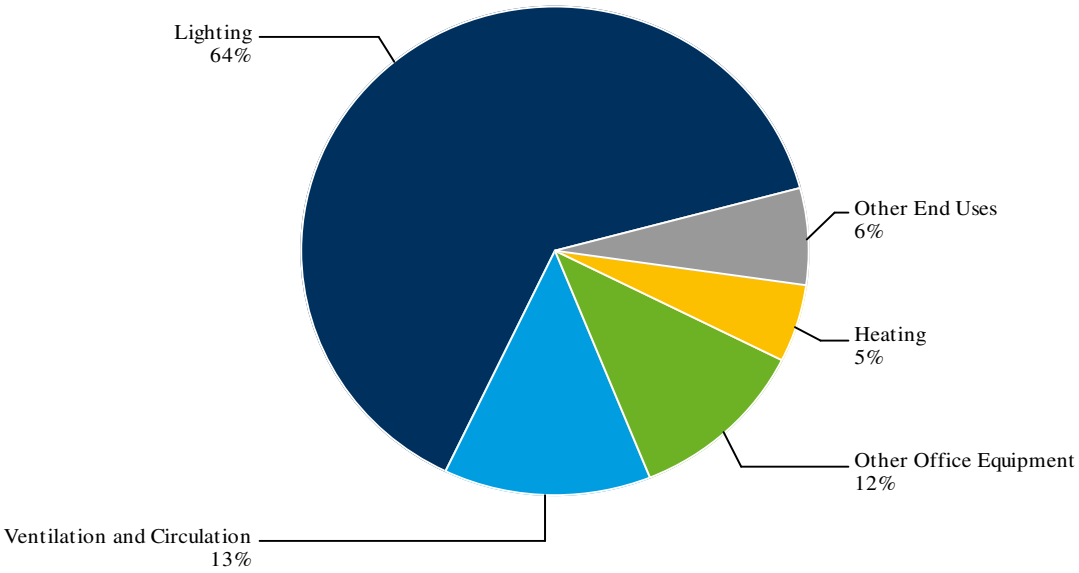
Figure C-3B.90. Baseline Sales 2032 - Washington: Commercial School by End Use



Note: 'Other End Uses' includes:
Heat Pump: 3%, Cooling: 2%, Refrigeration: 2%, Cooking: <1%, Appliances: <1%

Figure C-3B.91. Baseline Sales 2032 - Washington: Commercial Warehouse by End Use

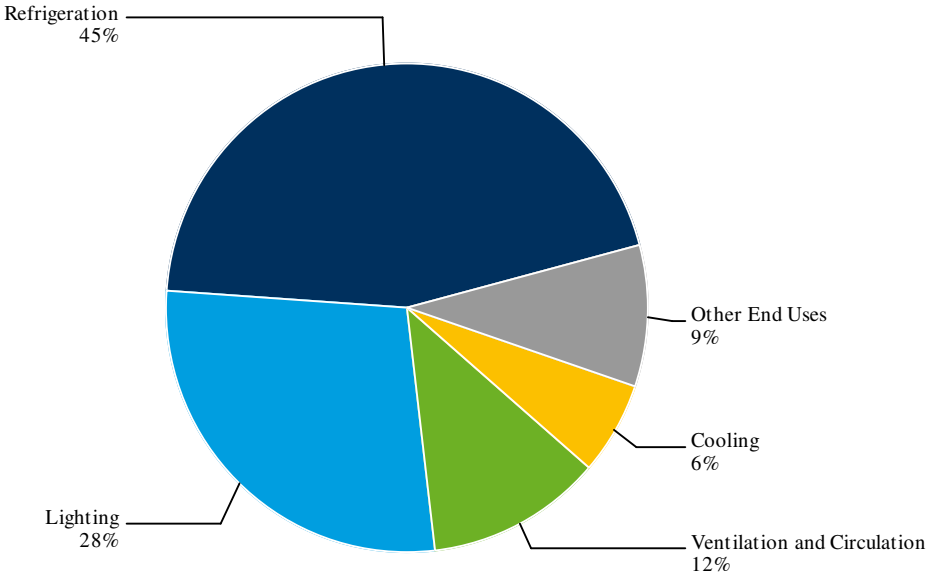
Total: 1 aMW



Note: 'Other End Uses' includes:
Cooling: 3%, Water Heat: 2%, Heat Pump: 1%, Appliances: <1%

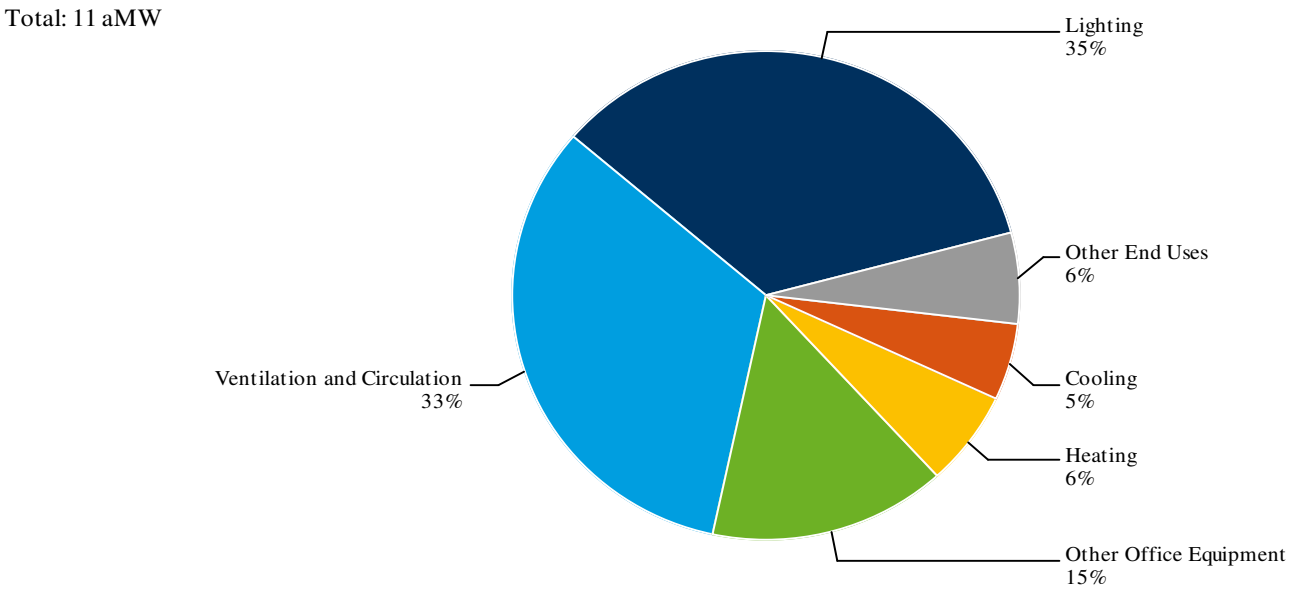
Figure C-3B.92. Baseline Sales 2032 - Wyoming: Commercial Grocery by End Use

Total: 8 aMW



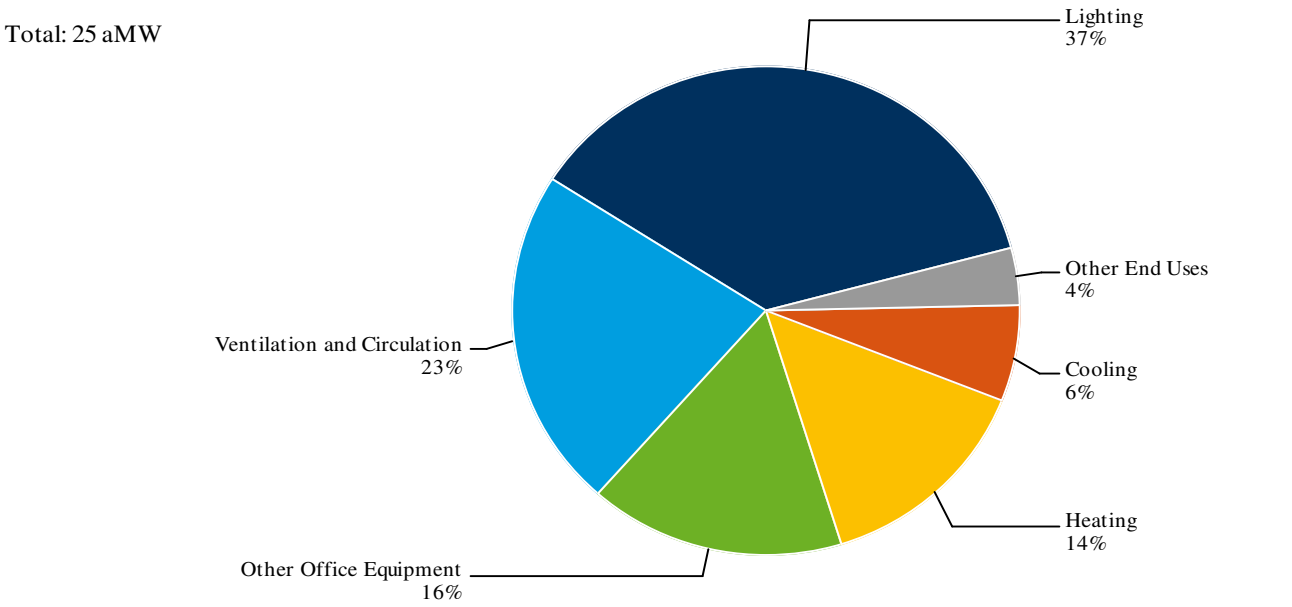
Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 3%, Heat Pump: 1%, Cooking: <1%, Water Heat: <1%, Appliances: <1%

Figure C-3B.93. Baseline Sales 2032 - Wyoming: Commercial Health by End Use



Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 2%, Refrigeration: <1%, Appliances: <1%, Cooking: <1%

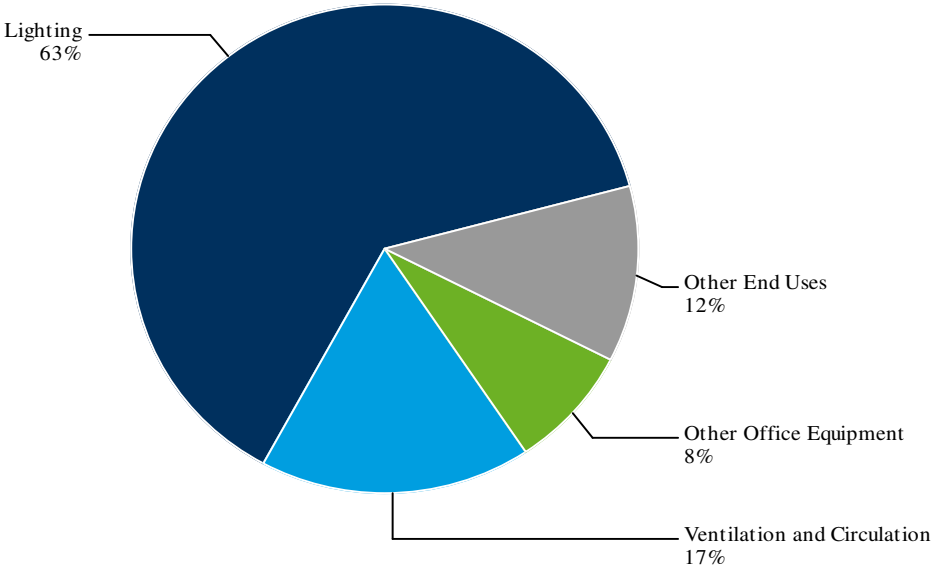
Figure C-3B.94. Baseline Sales 2032 - Wyoming: Commercial Office by End Use



Note: 'Other End Uses' includes:
Heat Pump: 2%, Water Heat: 1%, Appliances: <1%

Figure C-3B.95. Baseline Sales 2032 - Wyoming: Commercial Retail by End Use

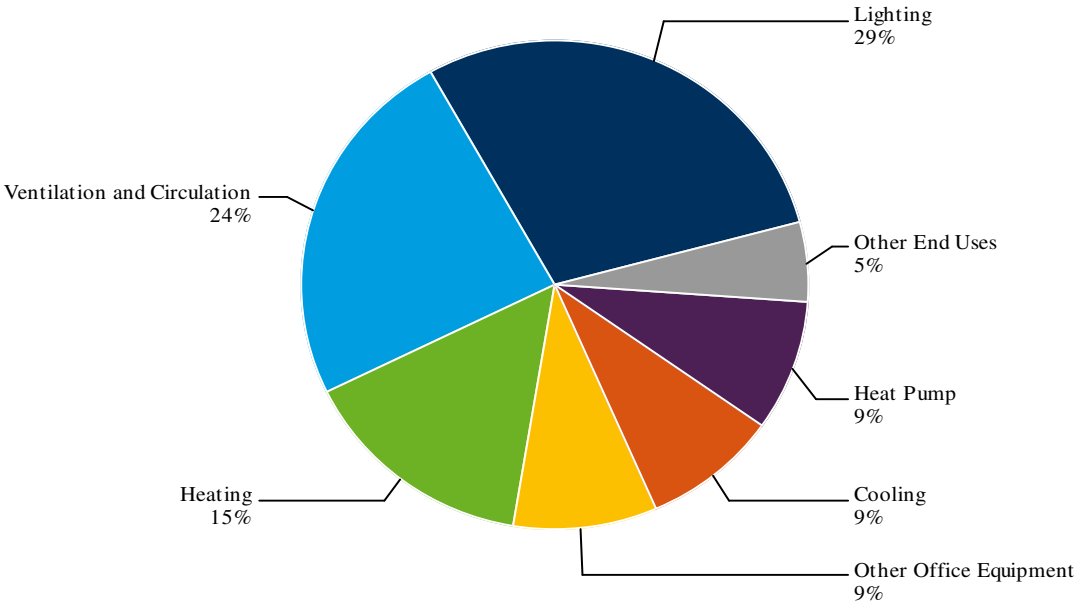
Total: 14 aMW



Note: 'Other End Uses' includes:
Heating: 4%, Cooling: 4%, Heat Pump: 2%, Water Heat: <1%, Appliances: <1%

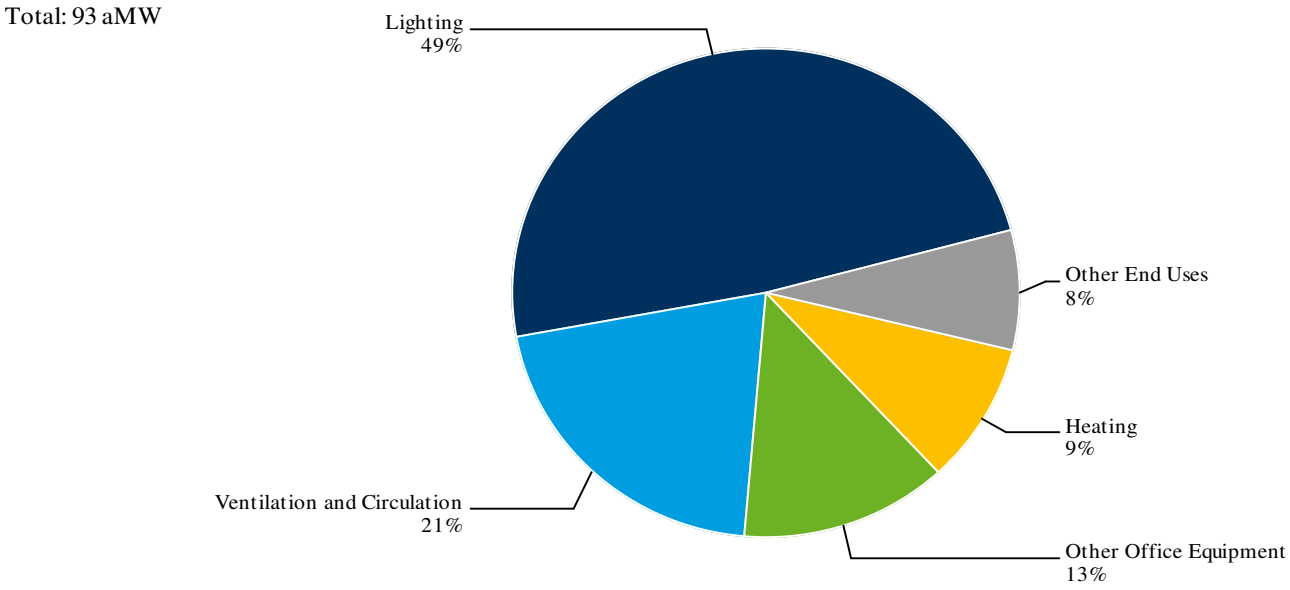
Figure C-3B.96. Baseline Sales 2032 - Wyoming: Commercial Lodging by End Use

Total: 10 aMW



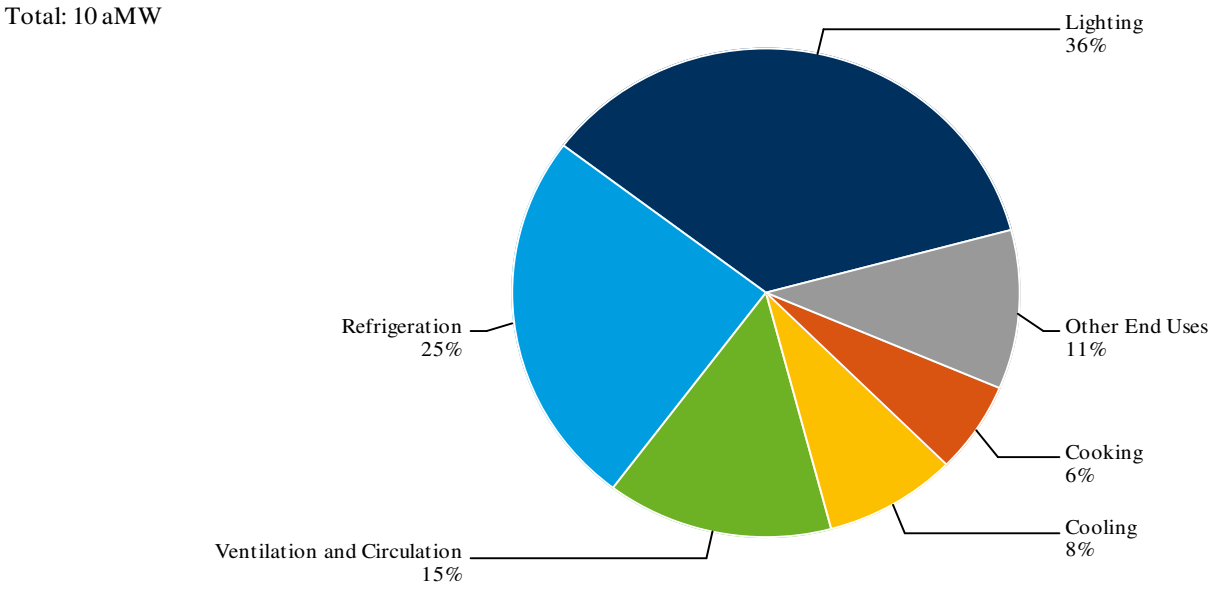
Note: 'Other End Uses' includes:
Water Heat: 3%, Refrigeration: 1%, Appliances: <1%

Figure C-3B.97. Baseline Sales 2032 - Wyoming: Commercial Miscellaneous by End Use



Note: 'Other End Uses' includes:
Cooling: 5%, Heat Pump: 1%, Refrigeration: <1%, Water Heat: <1%, Appliances: <1%, Cooking: <1%

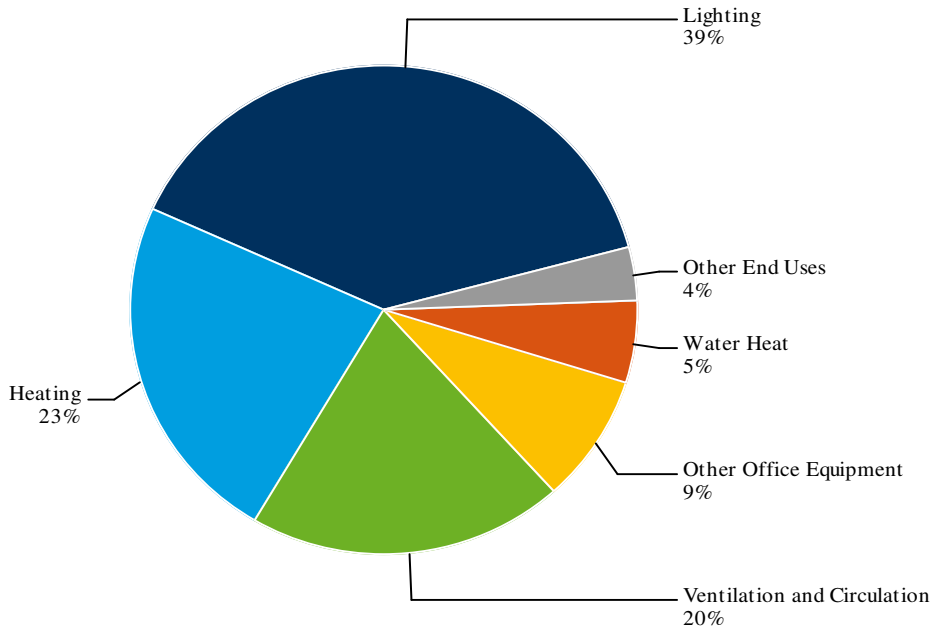
Figure C-3B.98. Baseline Sales 2032 - Wyoming: Commercial Restaurant by End Use



Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Water Heat: 3%, Heating: 2%, Appliances: 1%

Figure C-3B.99. Baseline Sales 2032 - Wyoming: Commercial School by End Use

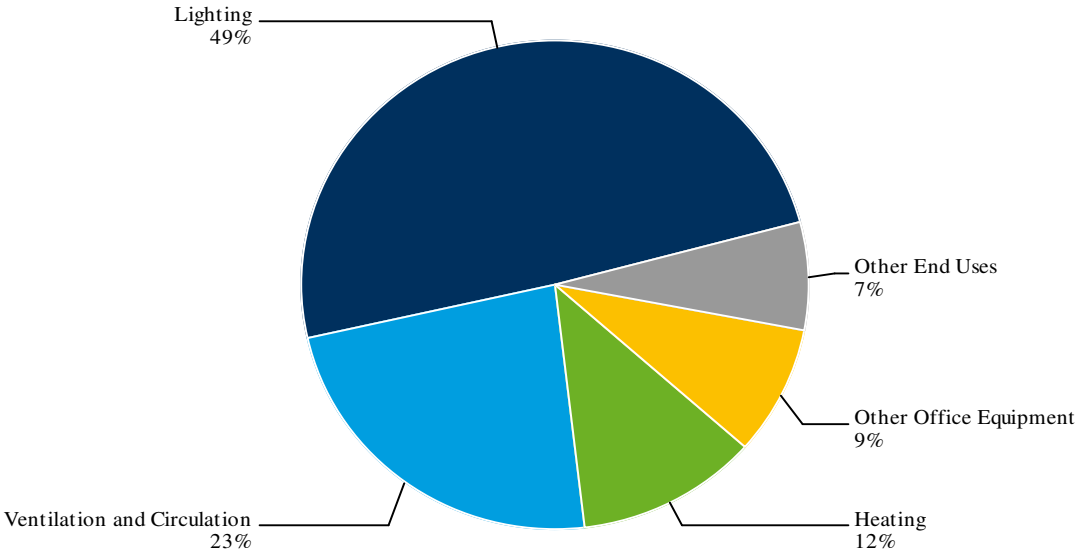
Total: 25 aMW



Note: 'Other End Uses' includes:
Refrigeration: 1%, Cooling: 1%, Cooking: <1%, Appliances: <1%

Figure C-3B.100. Baseline Sales 2032 - Wyoming: Commercial Warehouse by End Use

Total: 5 aMW



Note: 'Other End Uses' includes:
Water Heat: 2%, Heat Pump: 2%, Cooling: 2%, Appliances: <1%

Figure C-3B.101. Baseline Sales 2032 - California: Industrial Mach./Equip by End Use

Total: 0 aMW

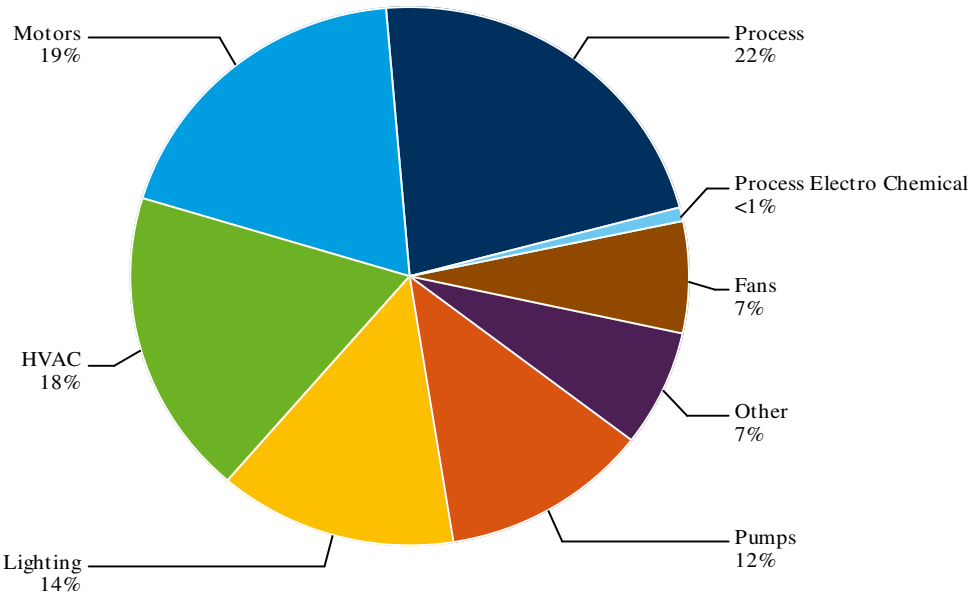
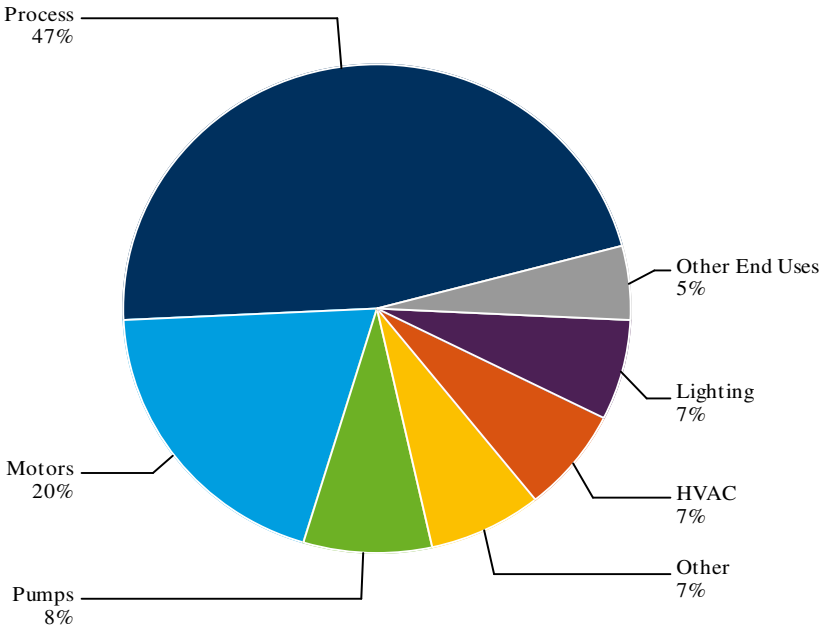


Figure C-3B.102. Baseline Sales 2032 - California: Industrial Food by End Use

Total: 0 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Indirect Boiler: 1%

Figure C-3B.103. Baseline Sales 2032 - California: Industrial Mach./Equip by End Use

Total: 0 aMW

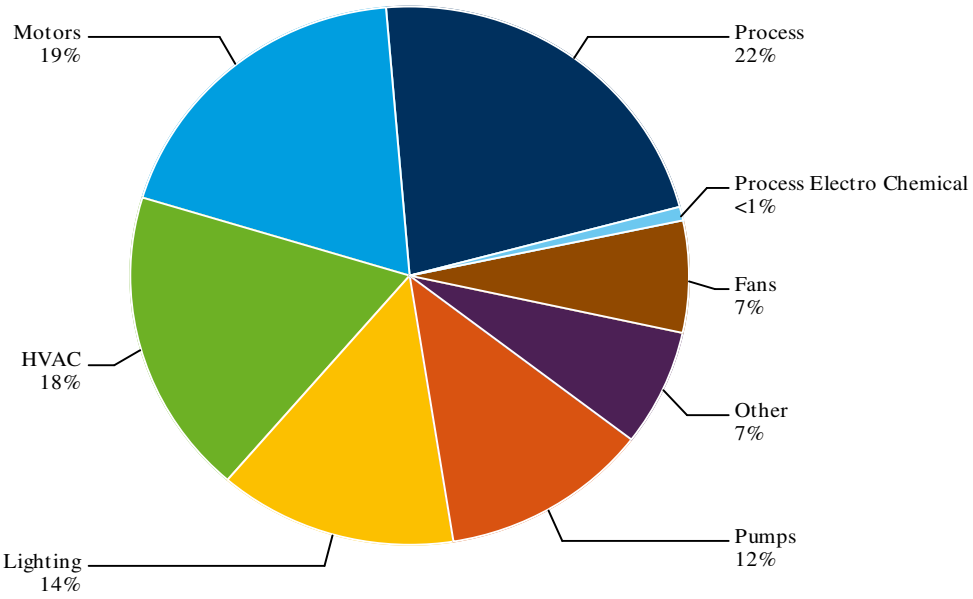
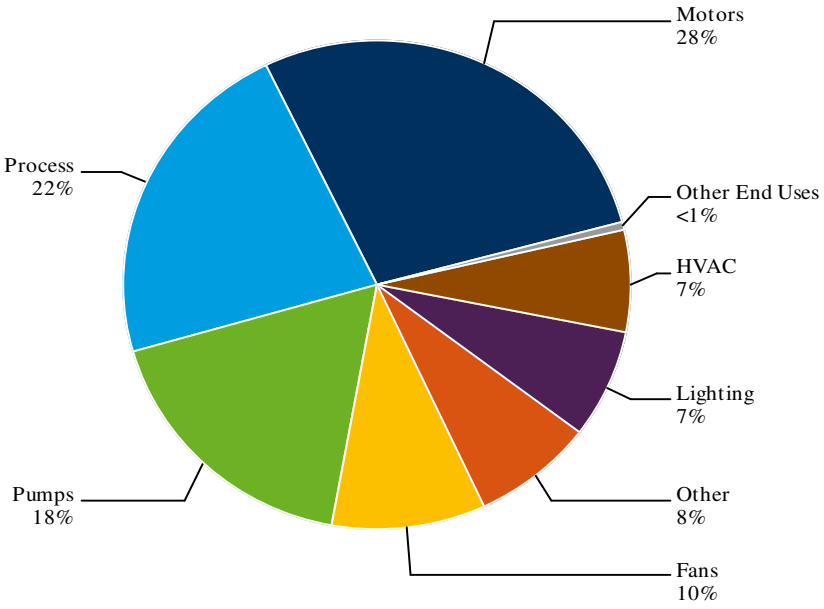


Figure C-3B.104. Baseline Sales 2032 - California: Industrial Lumber by End Use

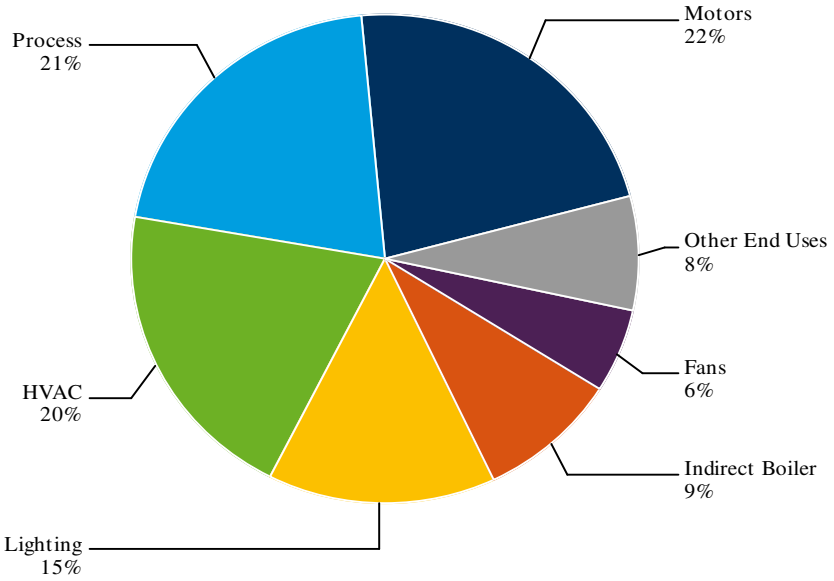
Total: 1 aMW



Note: 'Other End Uses' includes:
Indirect Boiler: <1%, Process Electro Chemical: <1%

Figure C-3B.105. Baseline Sales 2032 - California: Industrial Miscellaneous Mfg by End Use

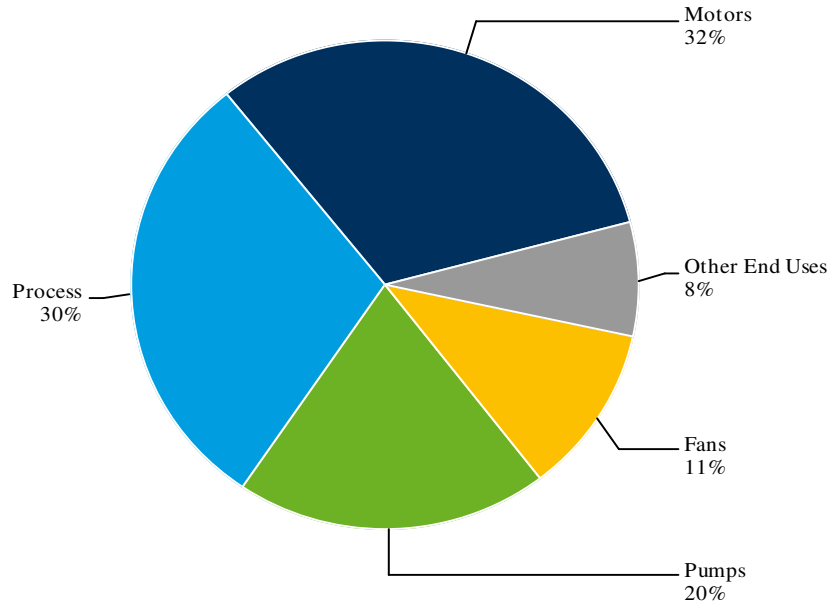
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 3%, Process Electro Chemical: <1%

Figure C-3B.106. Baseline Sales 2032 - California: Industrial Petroleum by End Use

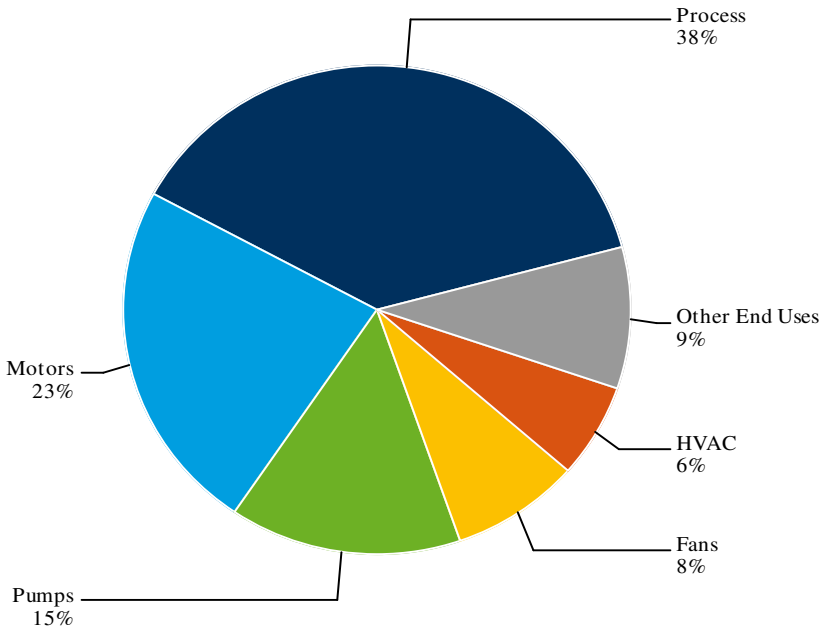
Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 3%, Lighting: 2%, Other: 1%, Indirect Boiler: <1%

Figure C-3B.107. Baseline Sales 2032 - California: Industrial Stone Clay Glass Products by End Use

Total: 0 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Other: 4%

Figure C-3B.108. Baseline Sales 2032 - California: Industrial Transportation by End Use

Total: 0 aMW

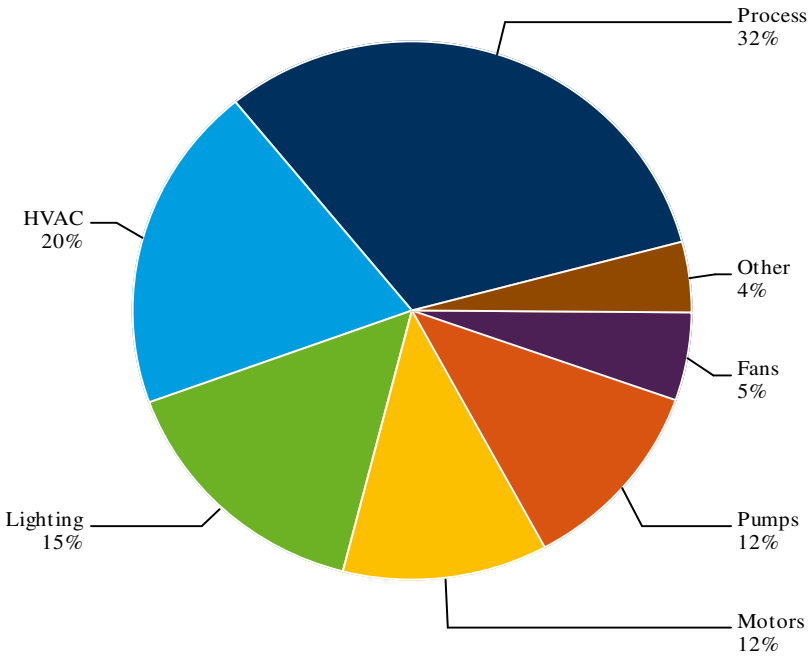


Figure C-3B.109. Baseline Sales 2032 - California: Industrial Water/Wastewater by End Use

Total: 0 aMW

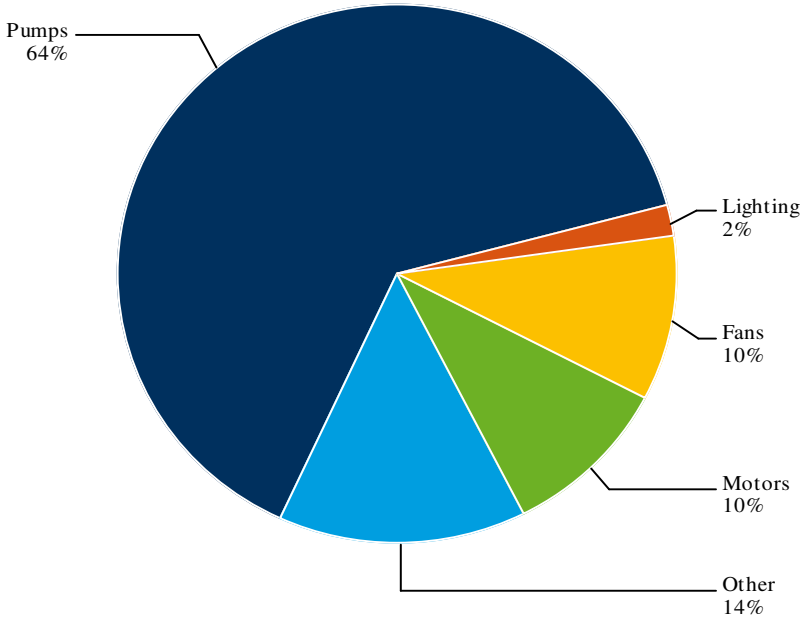
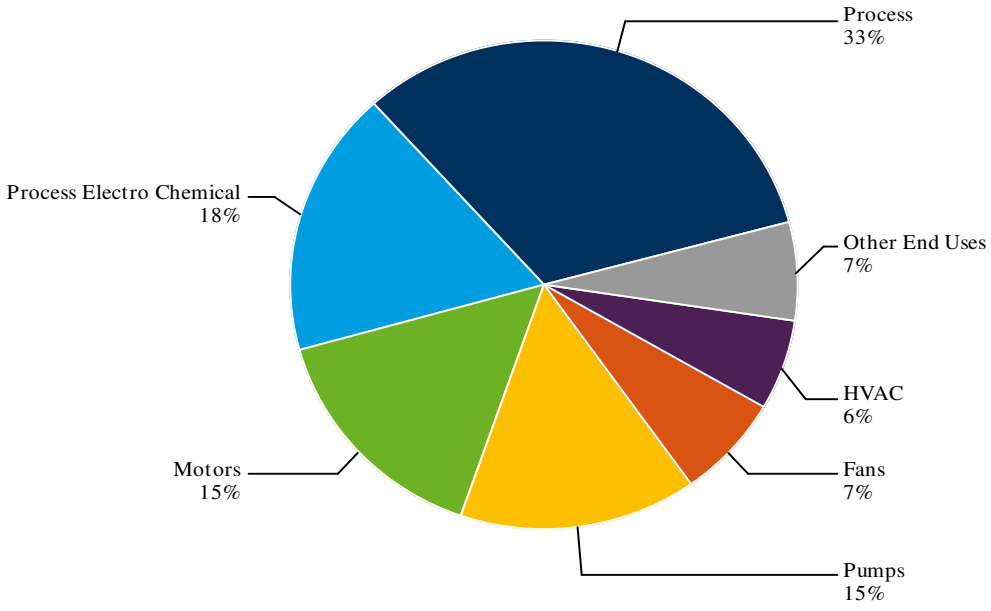


Figure C-3B.110. Baseline Sales 2032 - Idaho: Industrial Chemicals by End Use

Total: 1 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Other: 2%, Indirect Boiler: <1%

Figure C-3B.111. Baseline Sales 2032 - Idaho: Industrial Mach./Equip by End Use

Total: 3 aMW

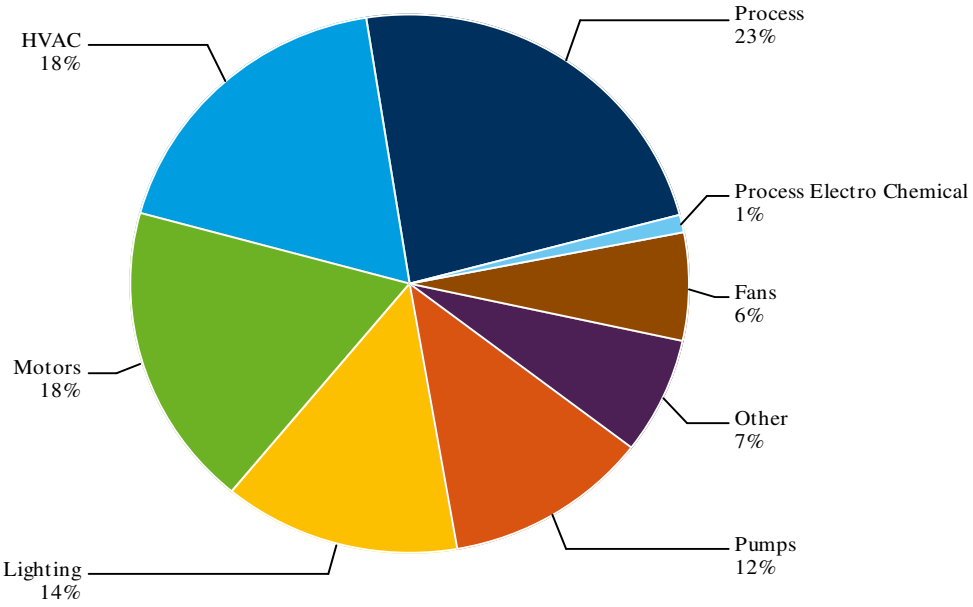
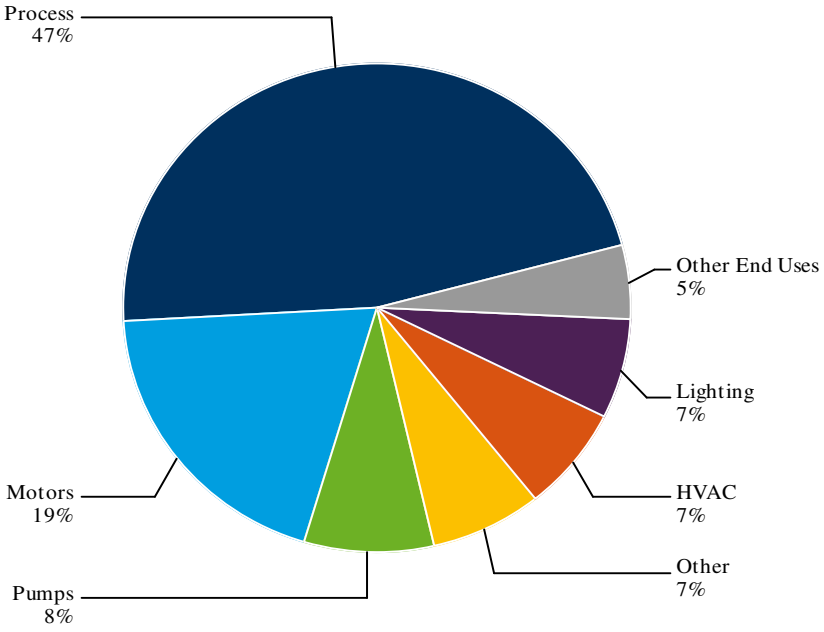


Figure C-3B.112. Baseline Sales 2032 - Idaho: Industrial Food by End Use

Total: 3 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Indirect Boiler: 1%

Figure C-3B.113. Baseline Sales 2032 - Idaho: Industrial Mach./Equip by End Use

Total: 3 aMW

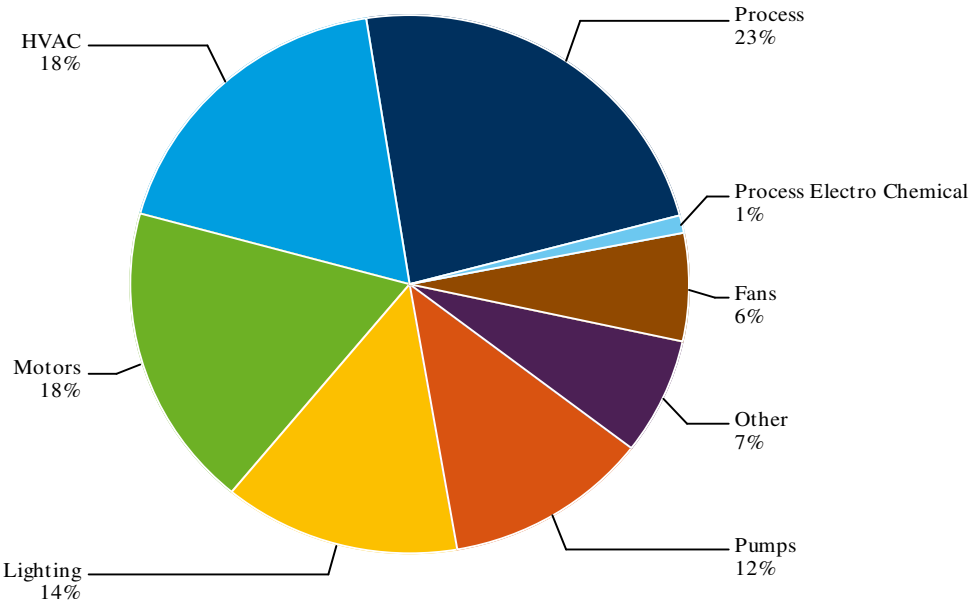


Figure C-3B.114. Baseline Sales 2032 - Idaho: Industrial Lumber by End Use

Total: 1 aMW

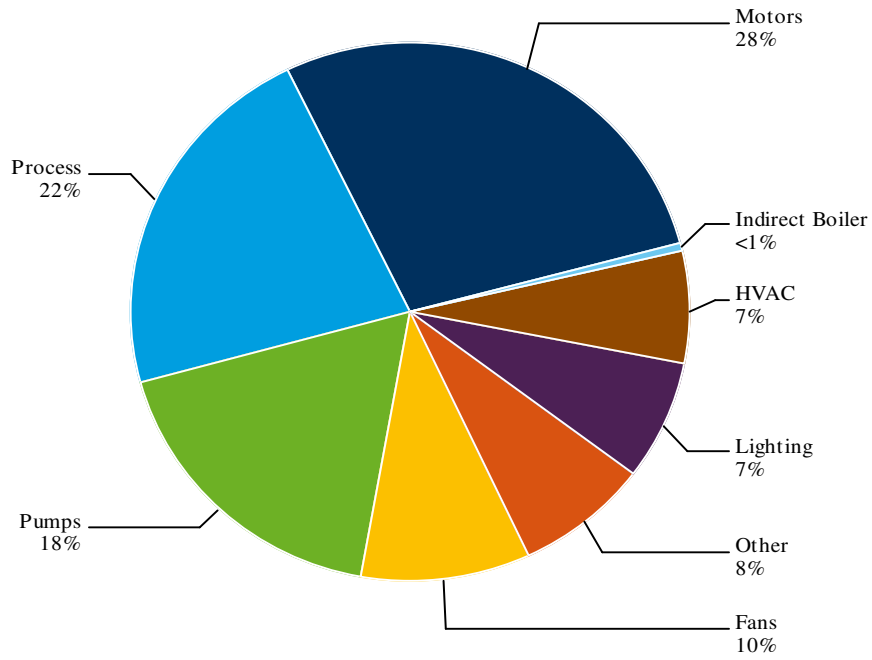
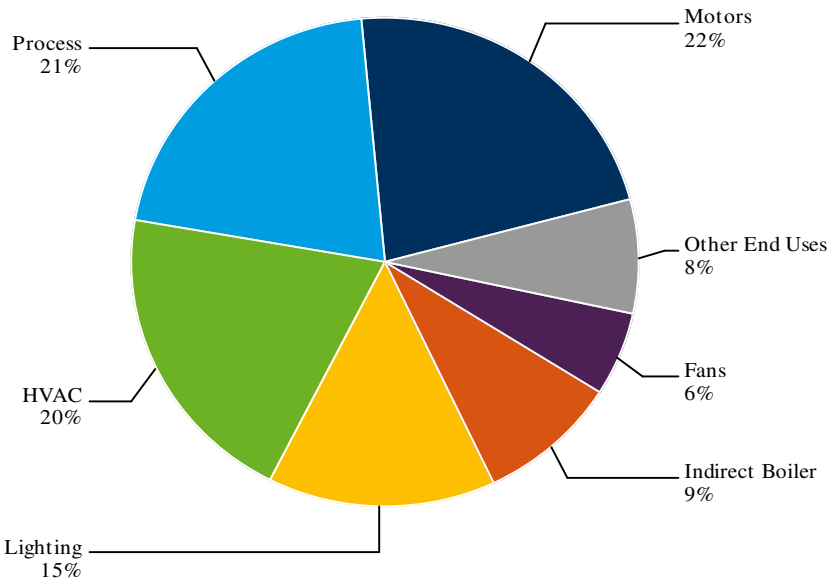


Figure C-3B.115. Baseline Sales 2032 - Idaho: Industrial Miscellaneous Mfg by End Use

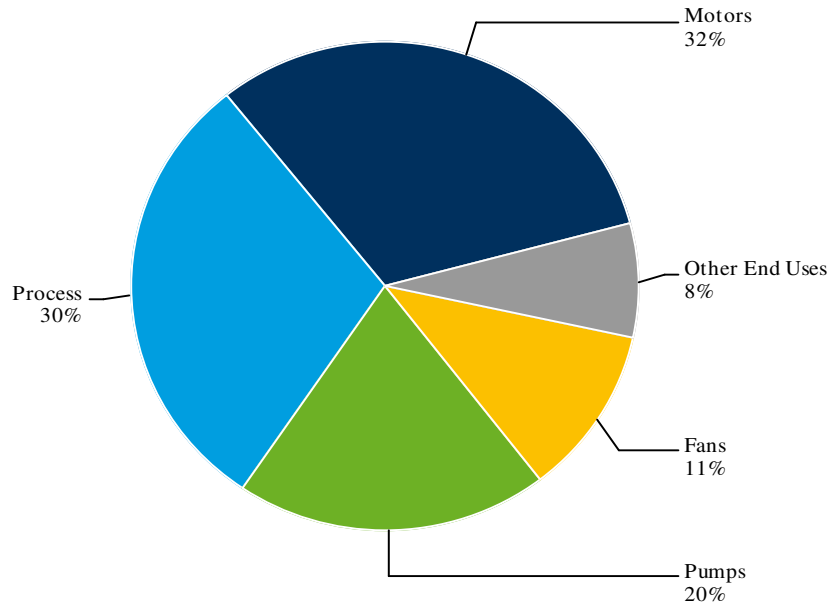
Total: 3 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 3%, Process Electro Chemical: <1%

Figure C-3B.122 Baseline Sales 2032 - Idaho: Industrial Petroleum by End Use

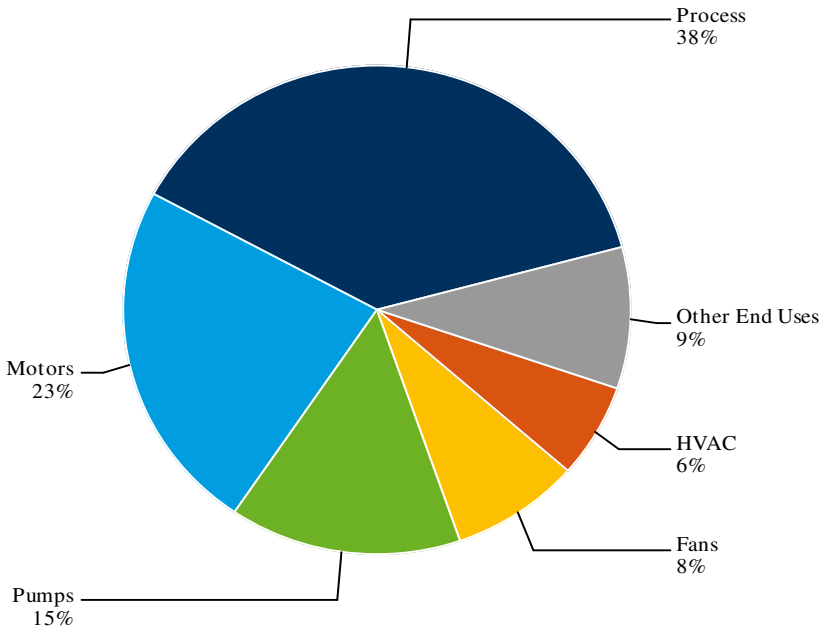
Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 3%, Lighting: 2%, Other: 1%, Indirect Boiler: <1%

Figure C-3B.116. Baseline Sales 2032 - Idaho: Industrial Stone Clay Glass Products by End Use

Total: 2 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Other: 4%

Figure C-3B.117. Baseline Sales 2032 - Idaho: Industrial Transportation by End Use

Total: 1 aMW

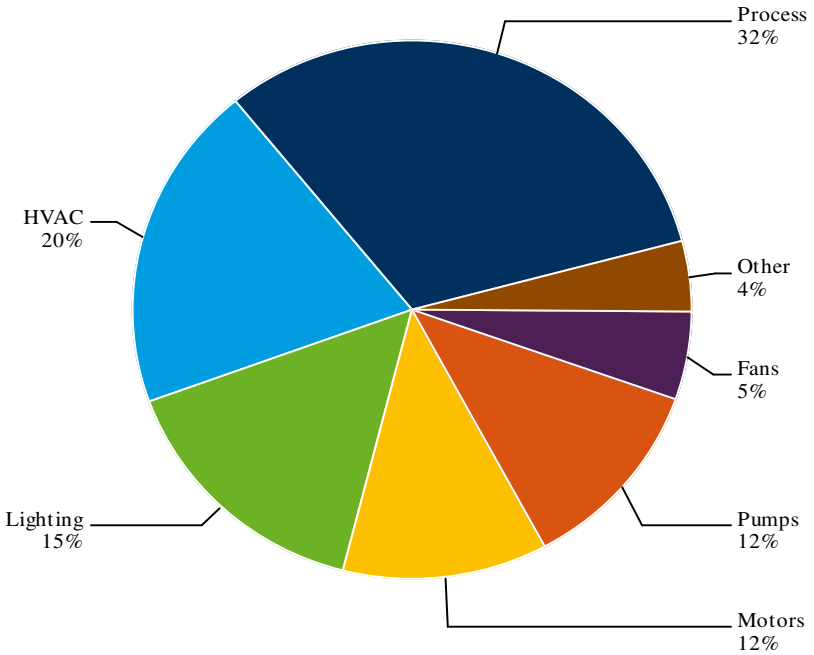


Figure C-3B.118. Baseline Sales 2032 - Idaho: Industrial Water/Wastewater by End Use

Total: 3 aMW

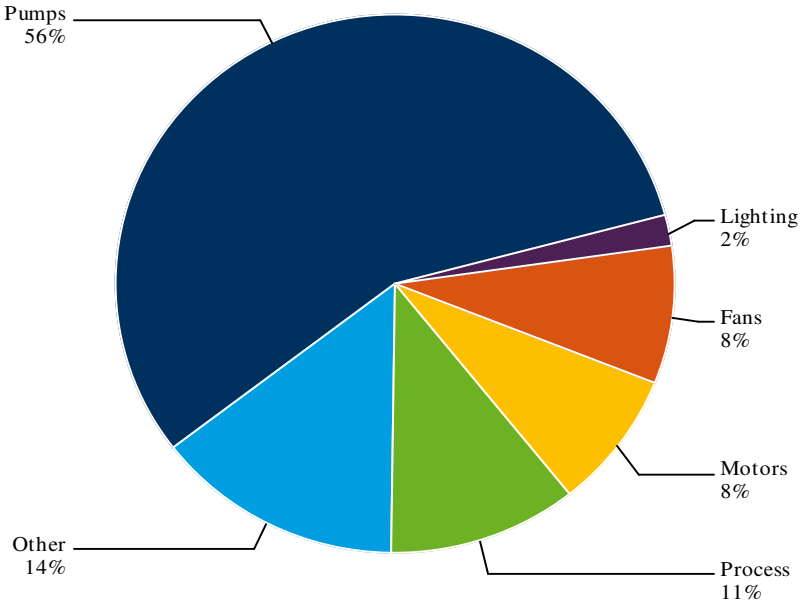
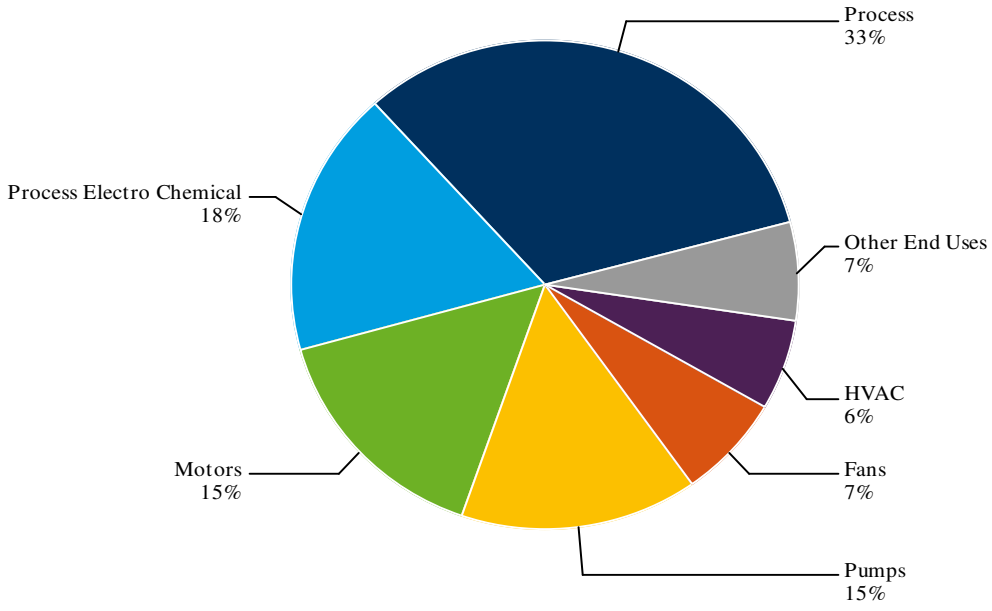


Figure C-3B.119. Baseline Sales 2032 - Utah: Industrial Chemicals by End Use

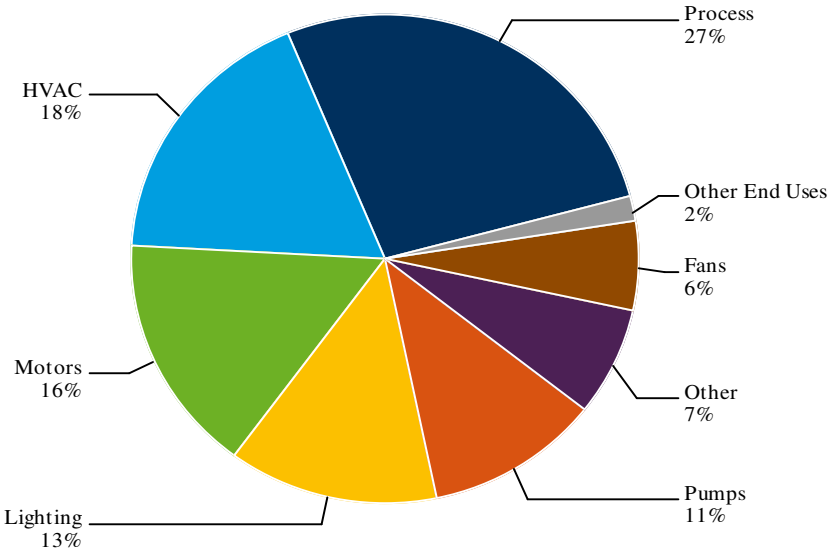
Total: 72 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Other: 2%, Indirect Boiler: <1%

Figure C-3B.120. Baseline Sales 2032 - Utah: Industrial Mach./Equip by End Use

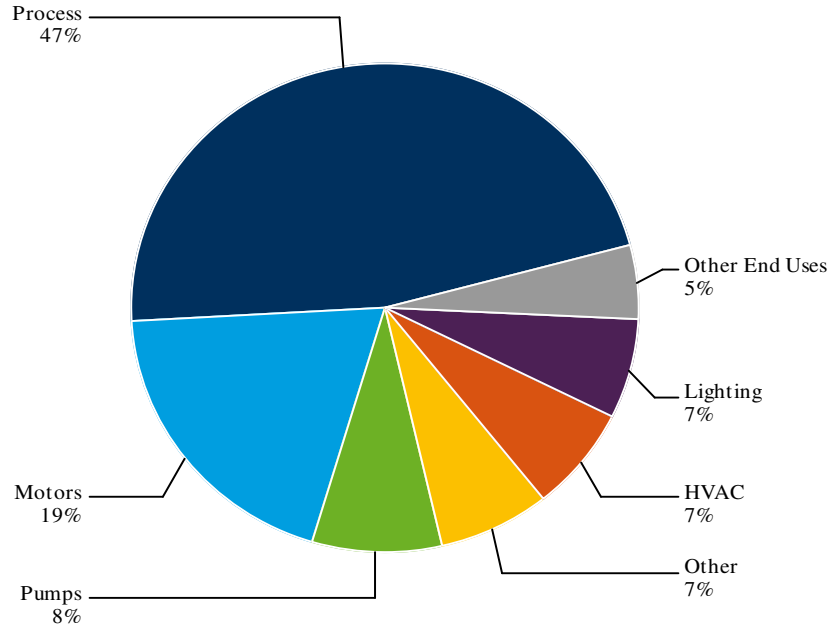
Total: 165 aMW



Note: 'Other End Uses' includes:
Process Electro Chemical: 2%, Indirect Boiler: <1%

Figure C-3B.121. Baseline Sales 2032 - Utah: Industrial Food by End Use

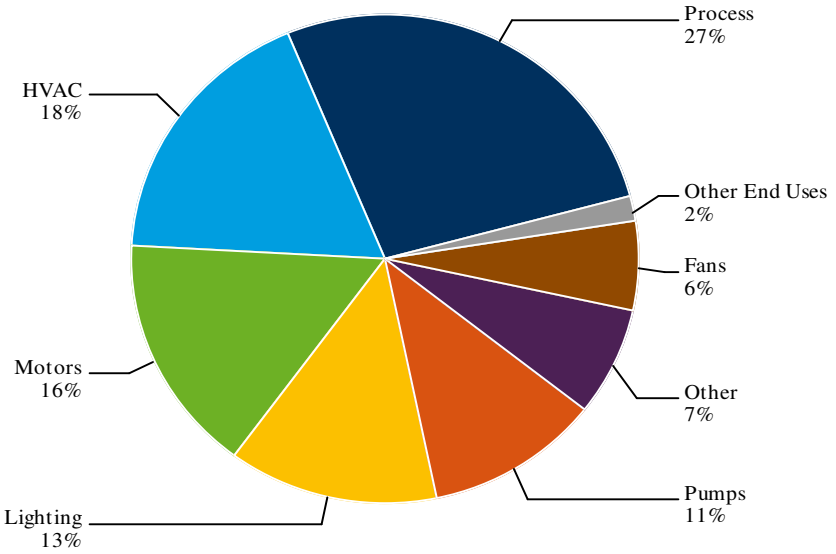
Total: 105 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Indirect Boiler: 1%

Figure C-3B.122. Baseline Sales 2032 - Utah: Industrial Mach./Equip by End Use

Total: 165 aMW



Note: 'Other End Uses' includes:
Process Electro Chemical: 2%, Indirect Boiler: <1%

Figure C-3B.123. Baseline Sales 2032 - Utah: Industrial Lumber by End Use

Total: 42 aMW

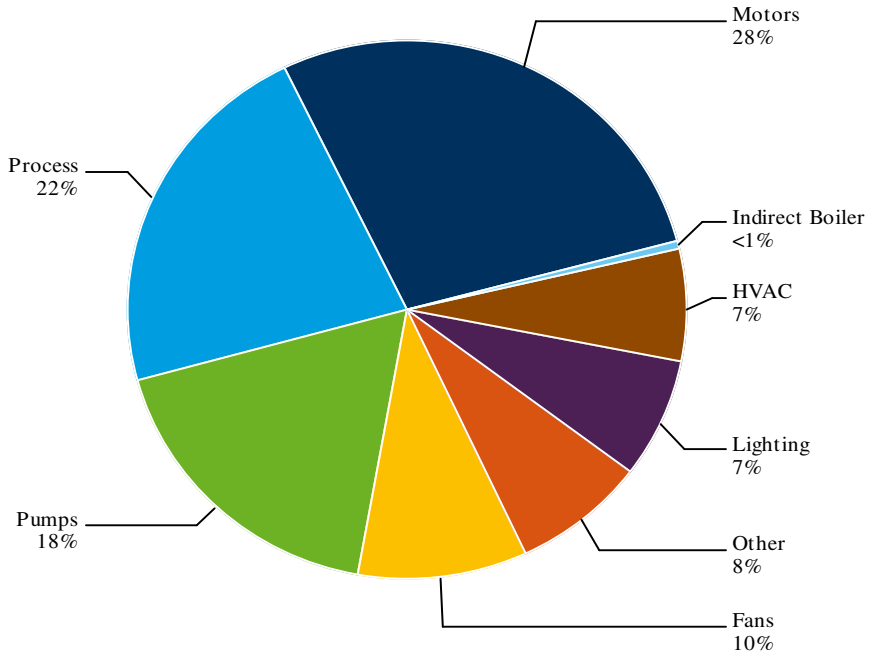


Figure C-3B.124. Baseline Sales 2032 - Utah: Industrial Mining by End Use

Total: 75 aMW

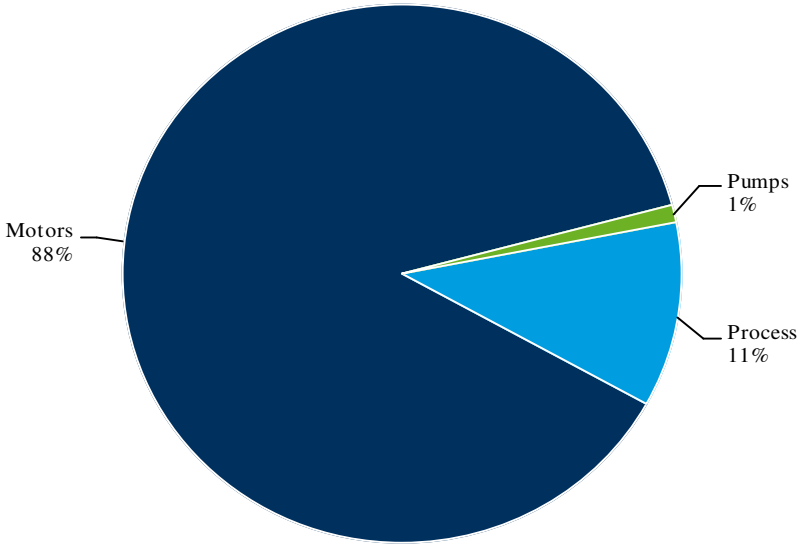
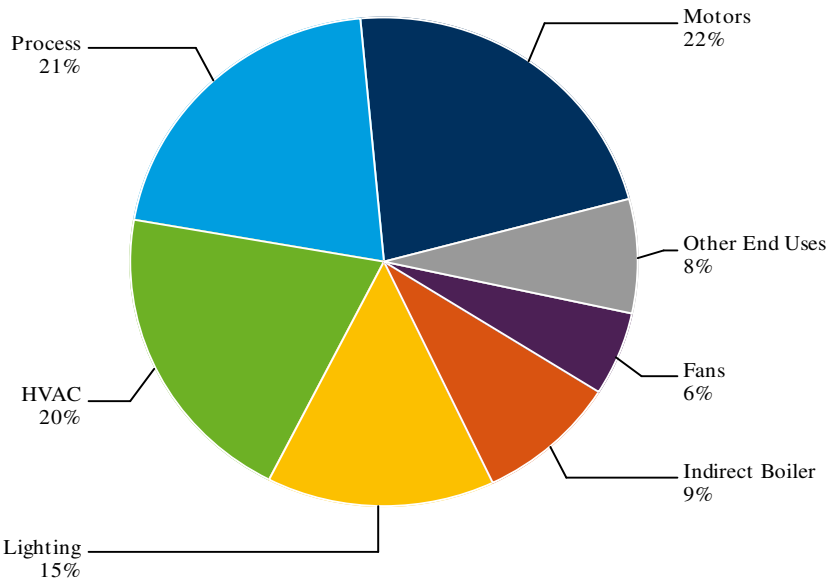


Figure C-3B.125. Baseline Sales 2032 - Utah: Industrial Miscellaneous Mfg by End Use

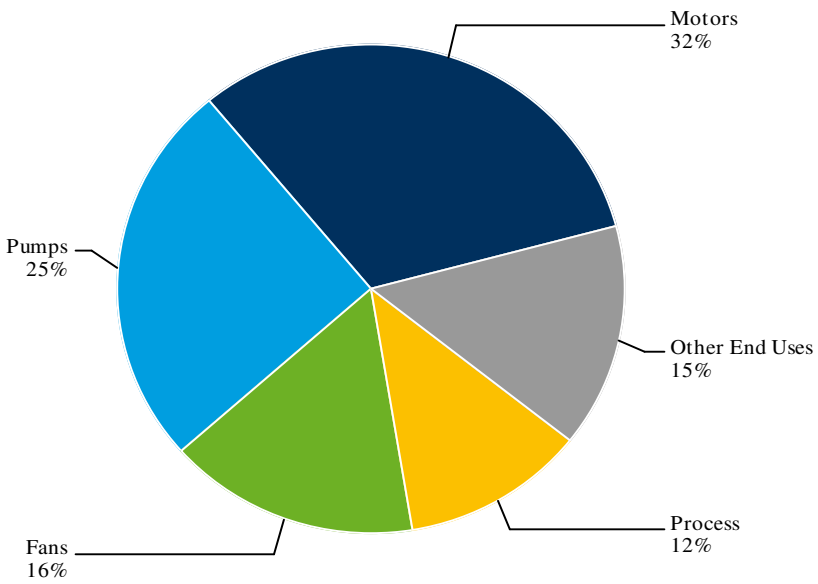
Total: 193 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 3%, Process Electro Chemical: <1%

Figure C-3B.126. Baseline Sales 2032 - Utah: Industrial Paper by End Use

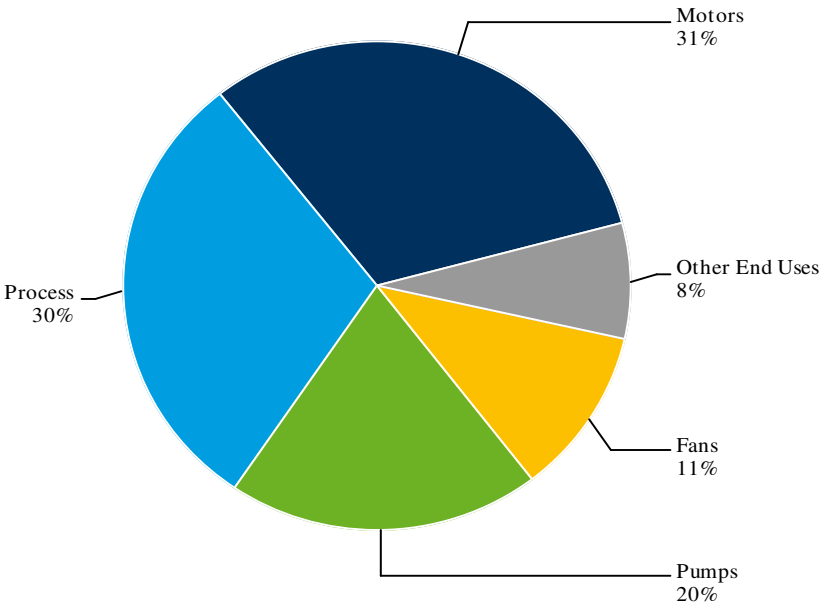
Total: 22 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Lighting: 4%, Indirect Boiler: 3%, Other: 2%, Process Electro Chemical: 2%

Figure C-3B.127. Baseline Sales 2032 - Utah: Industrial Petroleum by End Use

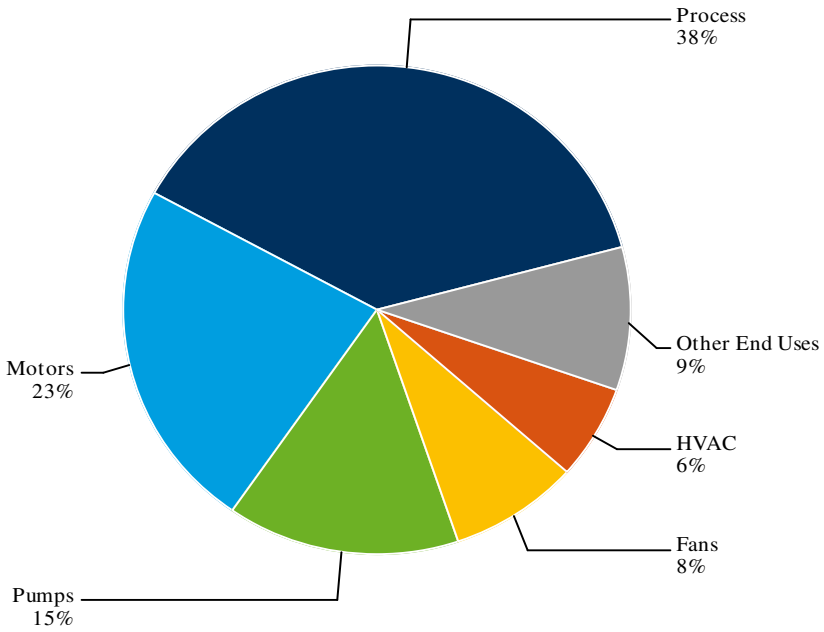
Total: 15 aMW



Note: 'Other End Uses' includes:
HVAC: 3%, Lighting: 2%, Other: 1%, Indirect Boiler: <1%, Process Electro Chemical: <1%

Figure C-3B.128. Baseline Sales 2032 - Utah: Industrial Stone Clay Glass Products by End Use

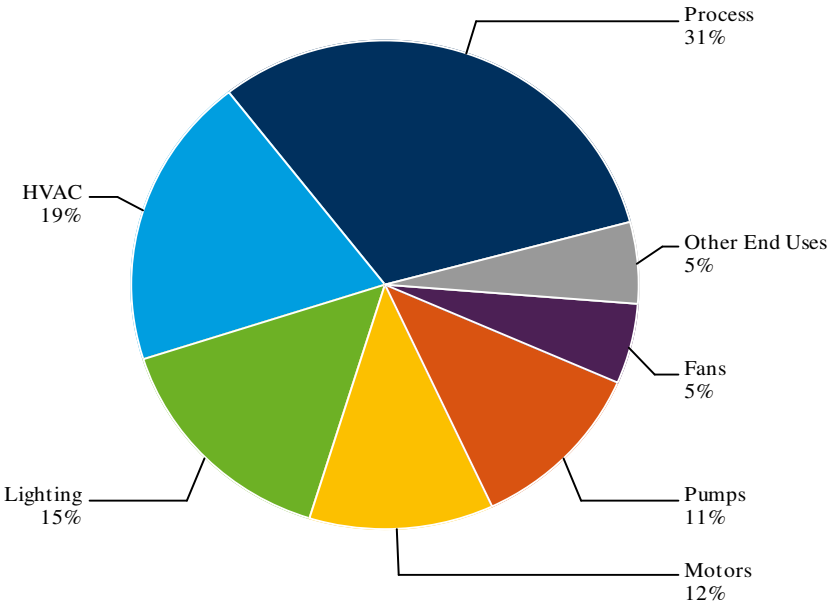
Total: 72 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Other: 4%, Indirect Boiler: <1%

Figure C-3B.129. Baseline Sales 2032 - Utah: Industrial Transportation by End Use

Total: 57 aMW



Note: 'Other End Uses' includes:
Other: 4%, Process Electro Chemical: 1%, Indirect Boiler: <1%

Figure C-3B.130. Baseline Sales 2032 - Utah: Industrial Water/Wastewater by End Use

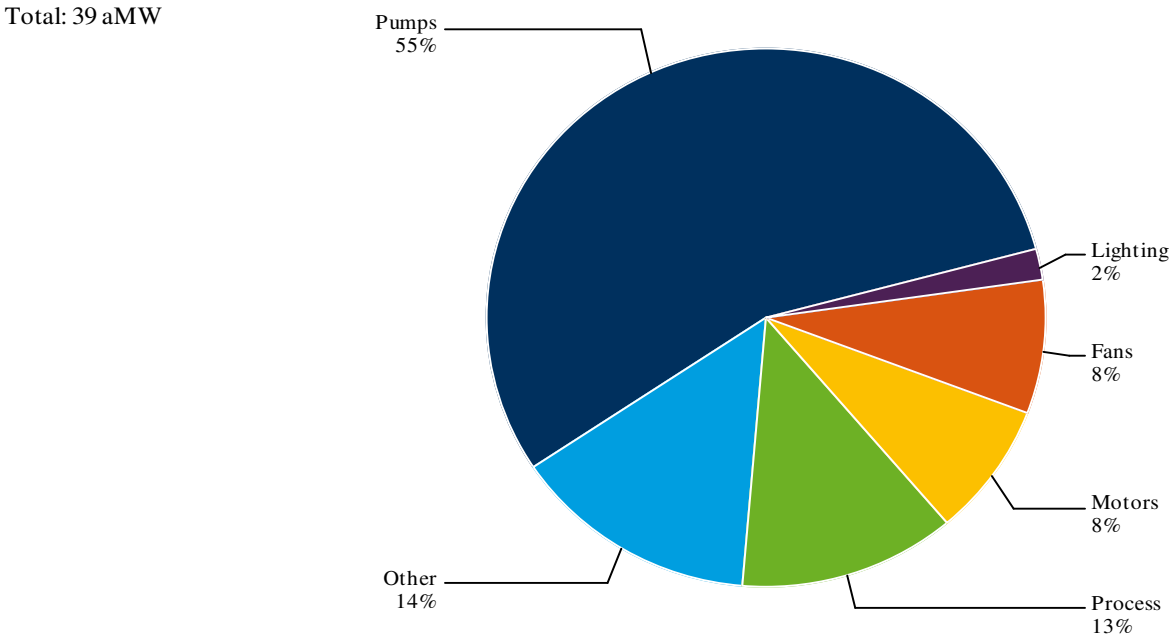
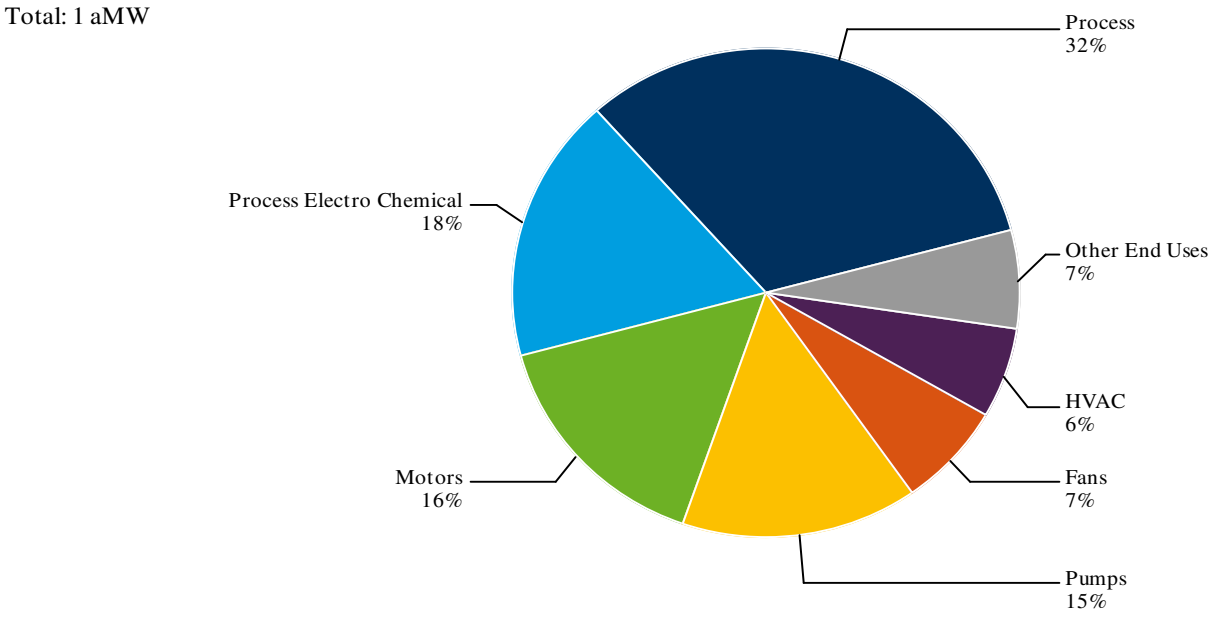


Figure C-3B.131. Baseline Sales 2032 - Washington: Industrial Chemicals by End Use



Note: 'Other End Uses' includes:
Lighting: 4%, Other: 2%, Indirect Boiler: <1%

Figure C-3B.132. Baseline Sales 2032 - Washington: Industrial Mach./Equip by End Use

Total: 19 aMW

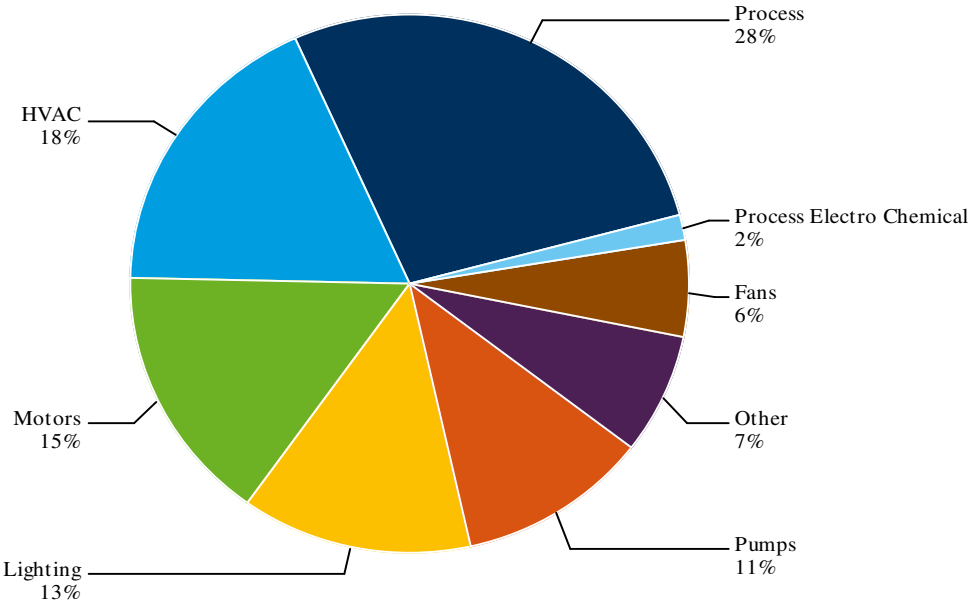
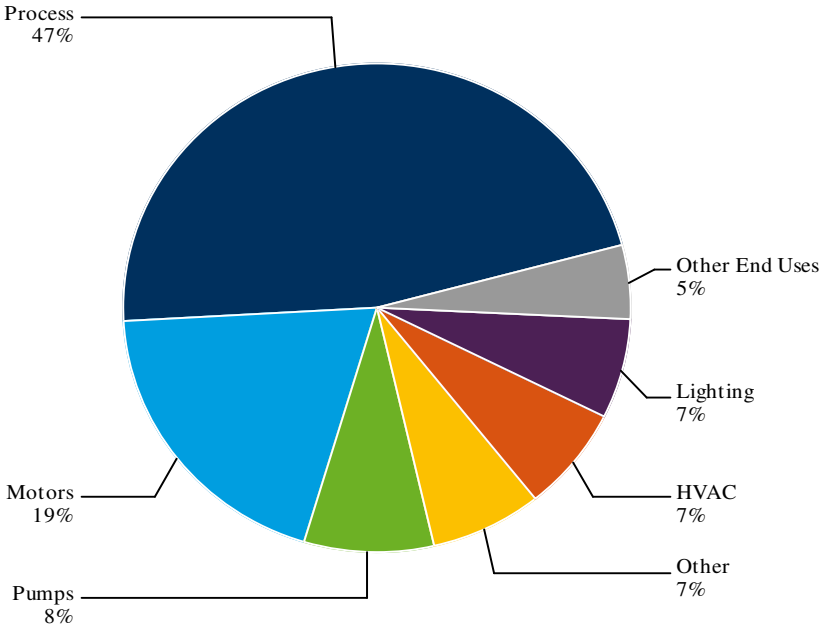


Figure C-3B.133. Baseline Sales 2032 - Washington: Industrial Food by End Use

Total: 16 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Indirect Boiler: 1%

Figure C-3B.134. Baseline Sales 2032 - Washington: Industrial Mach./Equip by End Use

Total: 19 aMW

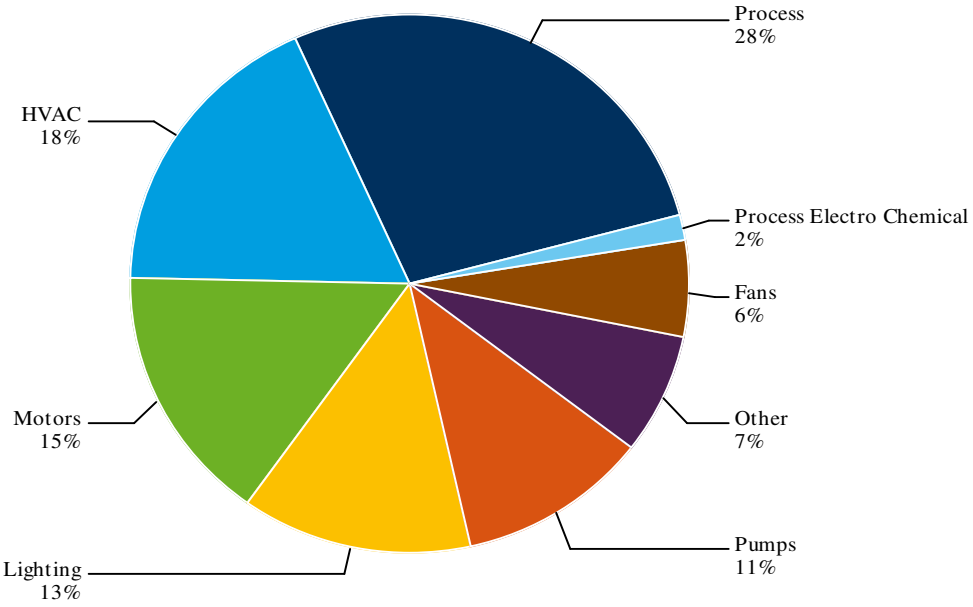
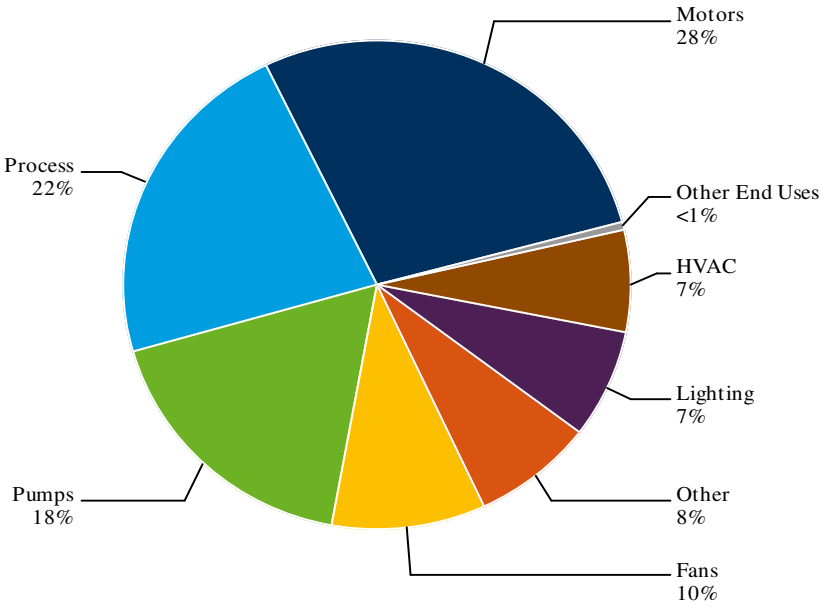


Figure C-3B.135. Baseline Sales 2032 - Washington: Industrial Lumber by End Use

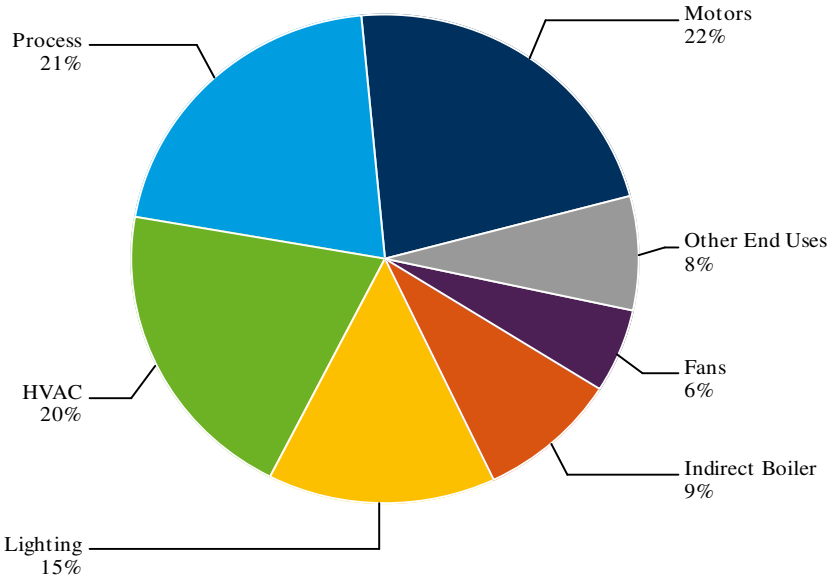
Total: 7 aMW



Note: 'Other End Uses' includes:
Indirect Boiler: <1%, Process Electro Chemical: <1%

Figure C-3B.136. Baseline Sales 2032 - Washington: Industrial Miscellaneous Mfg by End Use

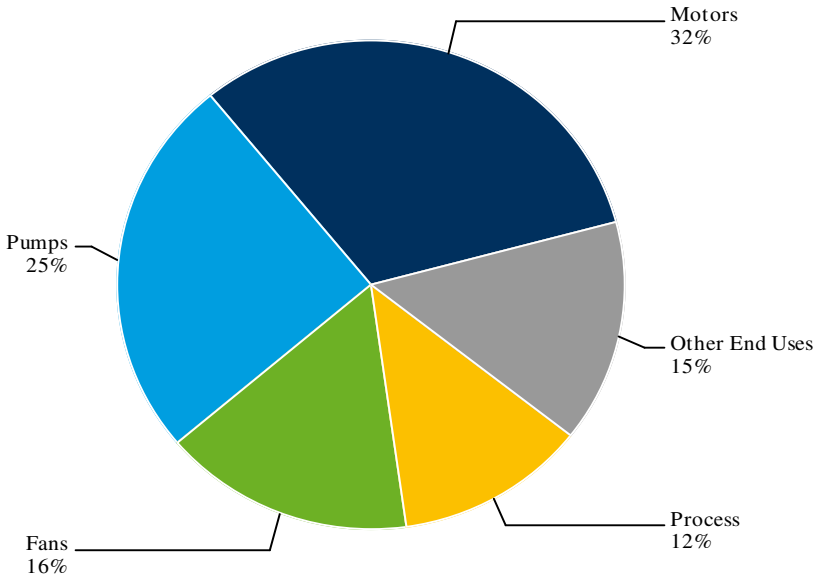
Total: 13 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 3%, Process Electro Chemical: <1%

Figure C-3B.137. Baseline Sales 2032 - Washington: Industrial Paper by End Use

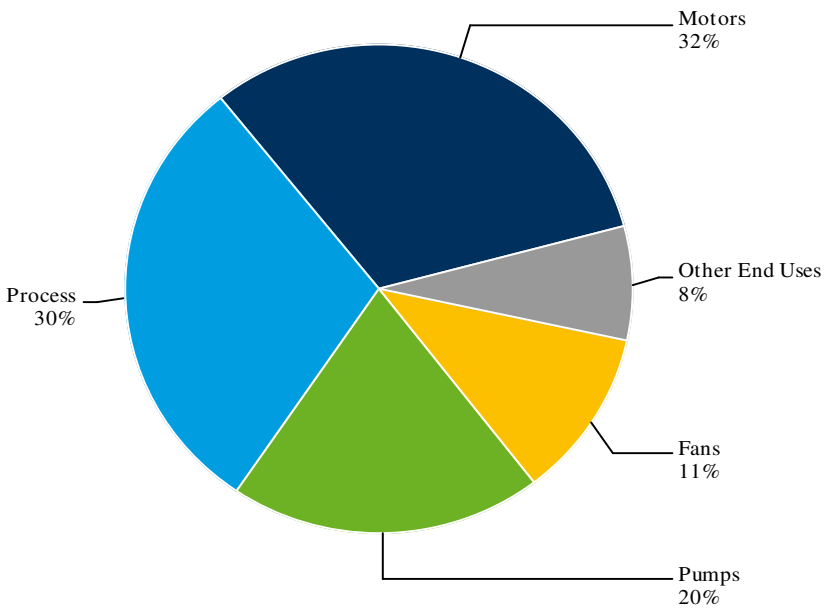
Total: 6 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Lighting: 4%, Indirect Boiler: 3%, Other: 2%, Process Electro Chemical: 2%

Figure C-3B.138. Baseline Sales 2032 - Washington: Industrial Petroleum by End Use

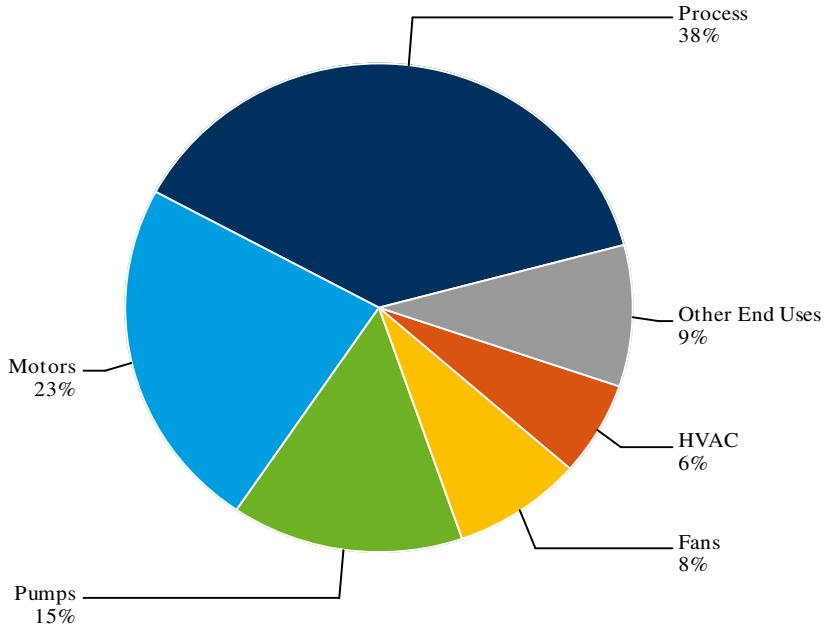
Total: 1 aMW



Note: 'Other End Uses' includes:
HVAC: 3%, Lighting: 2%, Other: 1%, Indirect Boiler: <1%

Figure C-3B.139. Baseline Sales 2032 - Washington: Industrial Stone Clay Glass Products by End Use

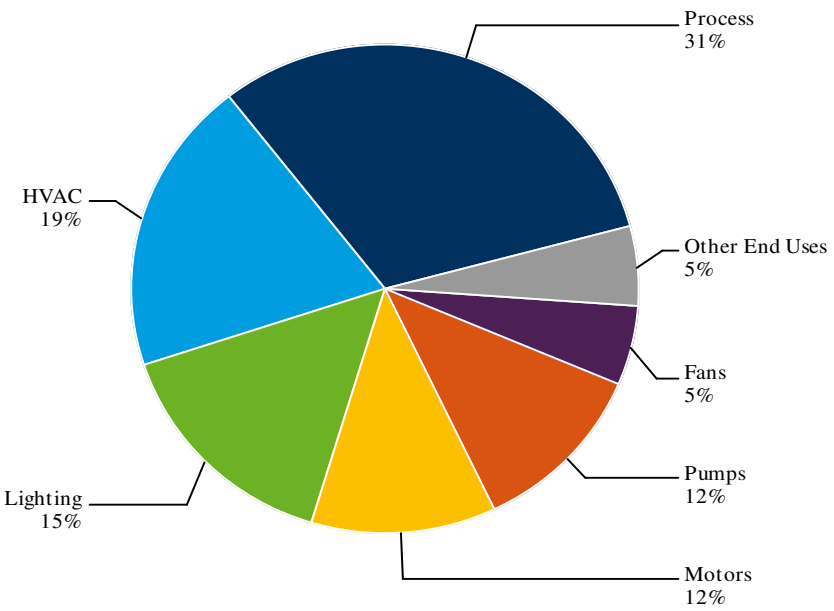
Total: 3 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Other: 4%

Figure C-3B.140. Baseline Sales 2032 - Washington: Industrial Transportation by End Use

Total: 1 aMW



Note: 'Other End Uses' includes:
Other: 4%, Process Electro Chemical: 1%

Figure C-3B.141. Baseline Sales 2032 - Washington: Industrial Water/Wastewater by End Use

Total: 4 aMW

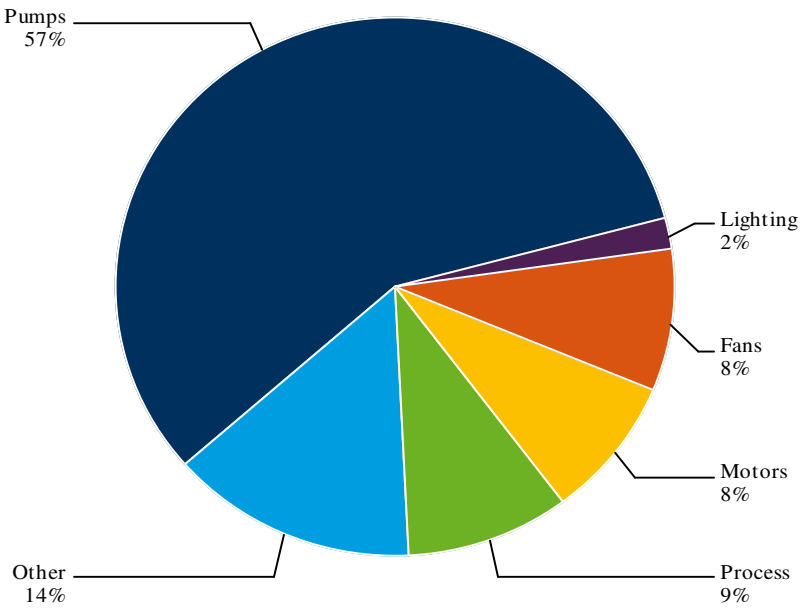
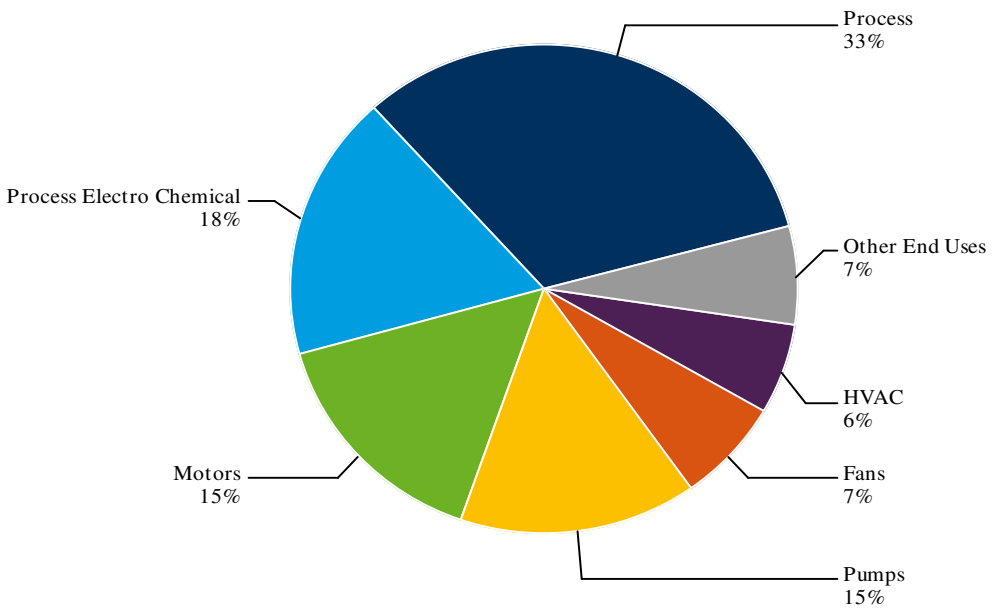


Figure C-3B.142. Baseline Sales 2032 - Wyoming: Industrial Chemicals by End Use

Total: 121 aMW



Note: 'Other End Uses' includes:
Lighting: 4%, Other: 2%, Indirect Boiler: <1%

Figure C-3B.143. Baseline Sales 2032 - Wyoming: Industrial Mach./Equip by End Use

Total: 157 aMW

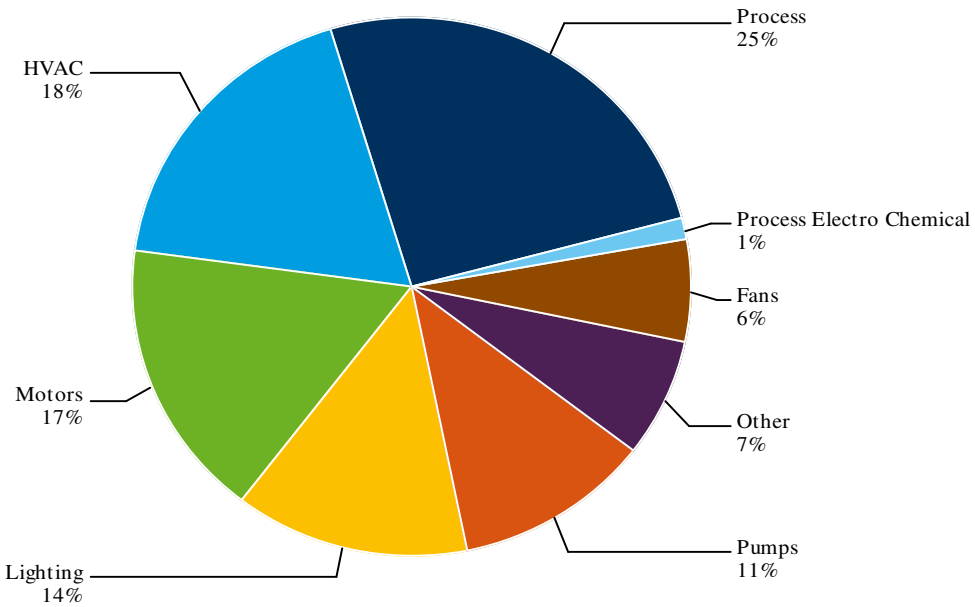
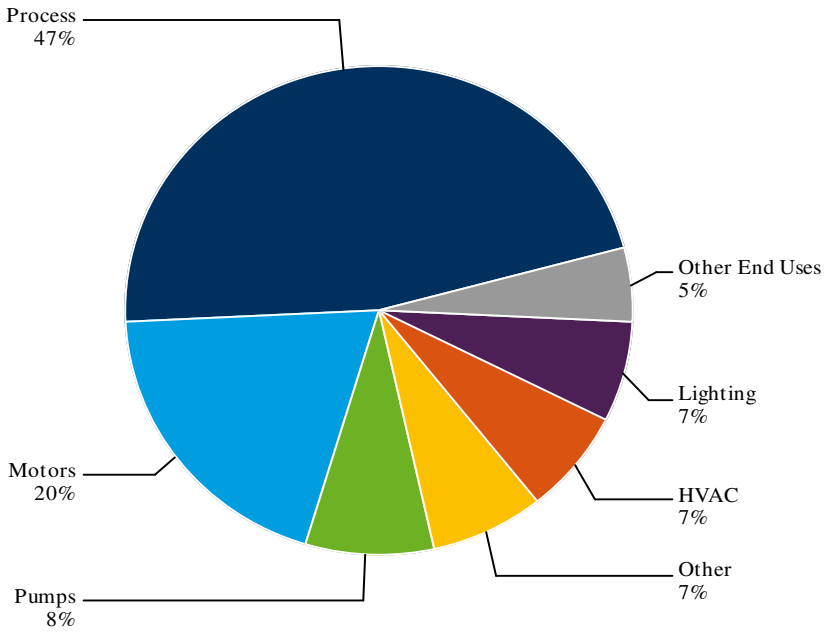


Figure C-3B.144. Baseline Sales 2032 - Wyoming: Industrial Food by End Use

Total: 66 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Indirect Boiler: 1%

Figure C-3B.145. Baseline Sales 2032 - Wyoming: Industrial Mach./Equip by End Use

Total: 157 aMW

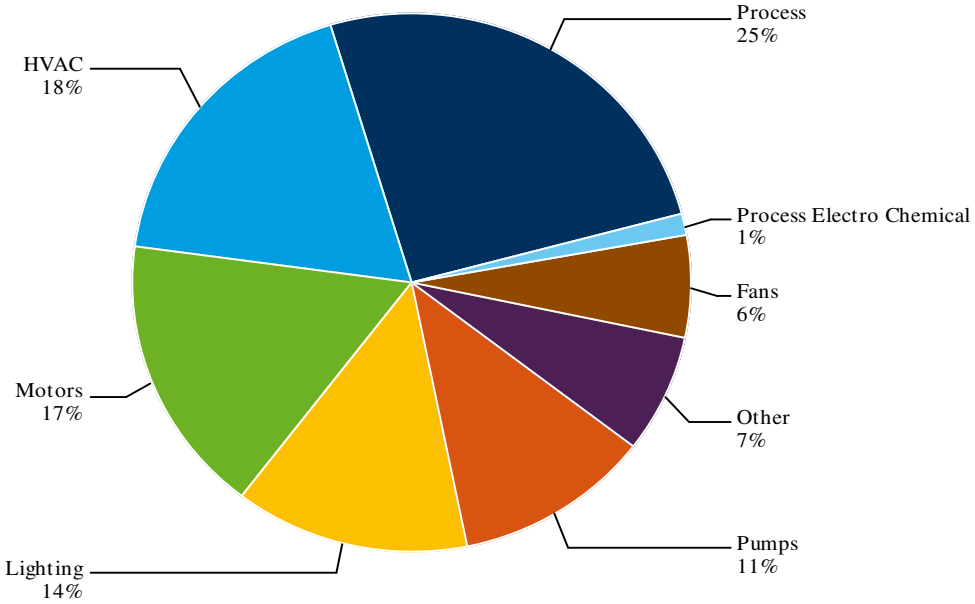


Figure C-3B.146. Baseline Sales 2032 - Wyoming: Industrial Lumber by End Use

Total: 48 aMW

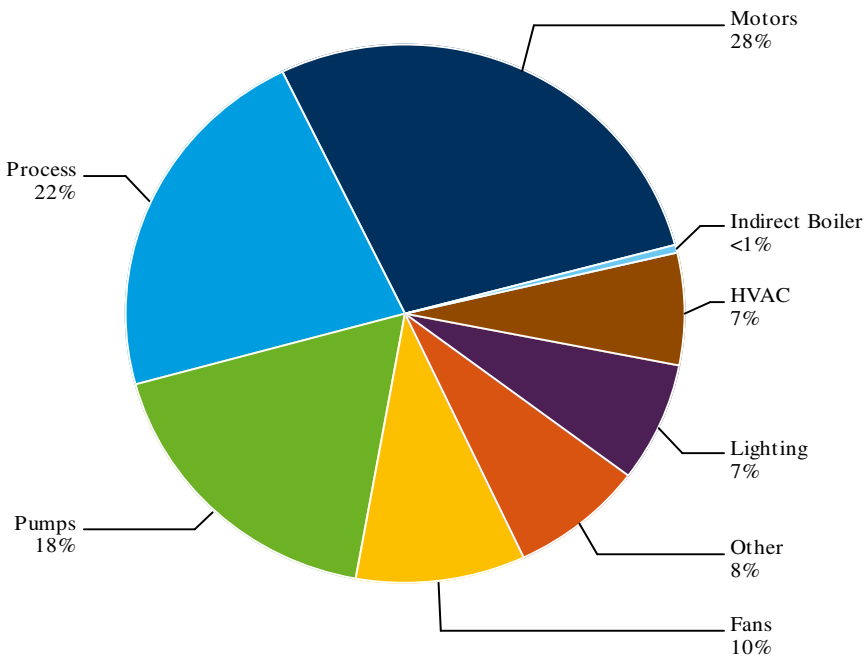


Figure C-3B.147. Baseline Sales 2032 - Wyoming: Industrial Mining by End Use

Total: 279 aMW

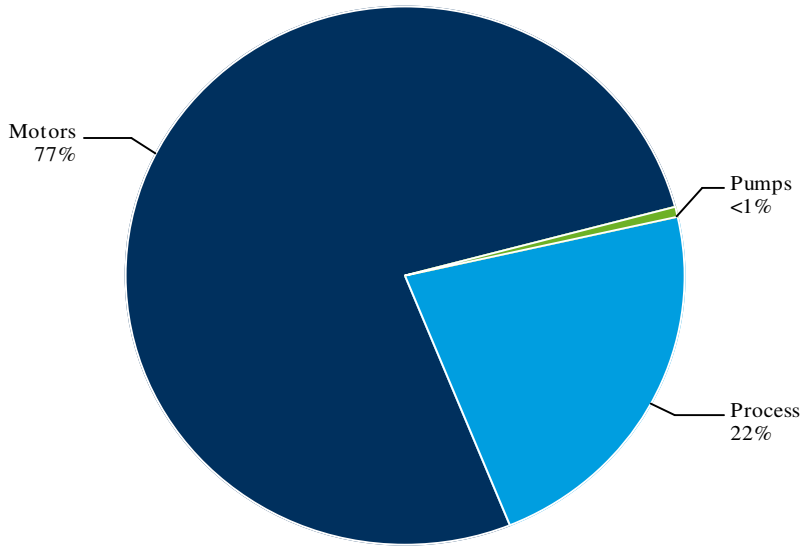
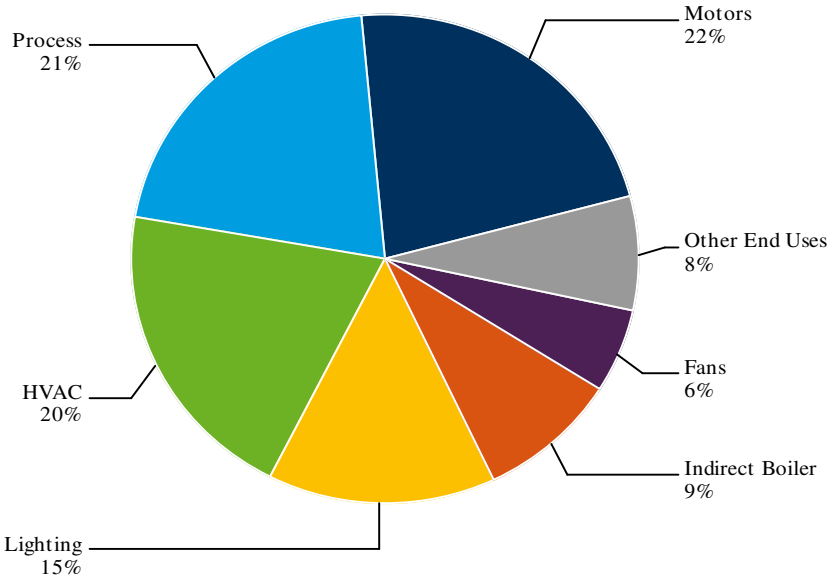


Figure C-3B.148. Baseline Sales 2032 - Wyoming: Industrial Miscellaneous Mfg by End Use

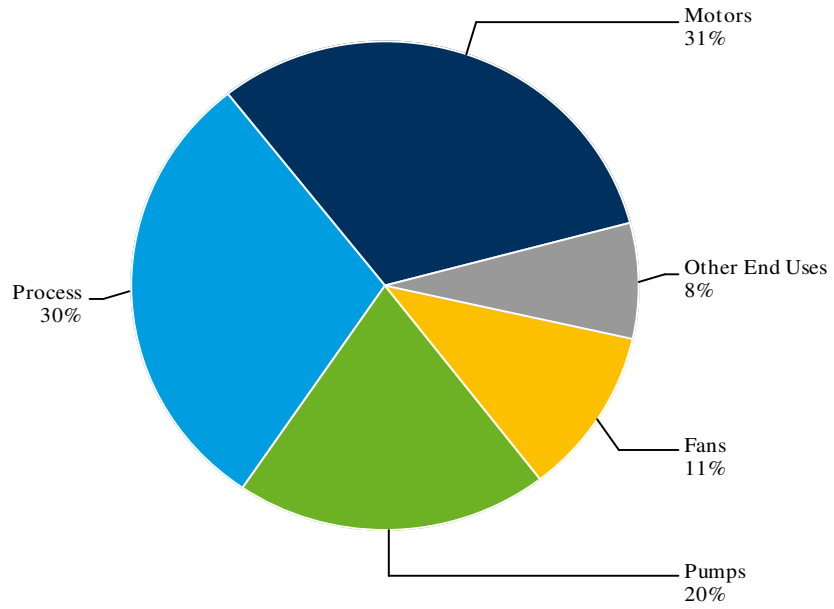
Total: 91 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 3%, Process Electro Chemical: <1%

Figure C-3B.149. Baseline Sales 2032 - Wyoming: Industrial Petroleum by End Use

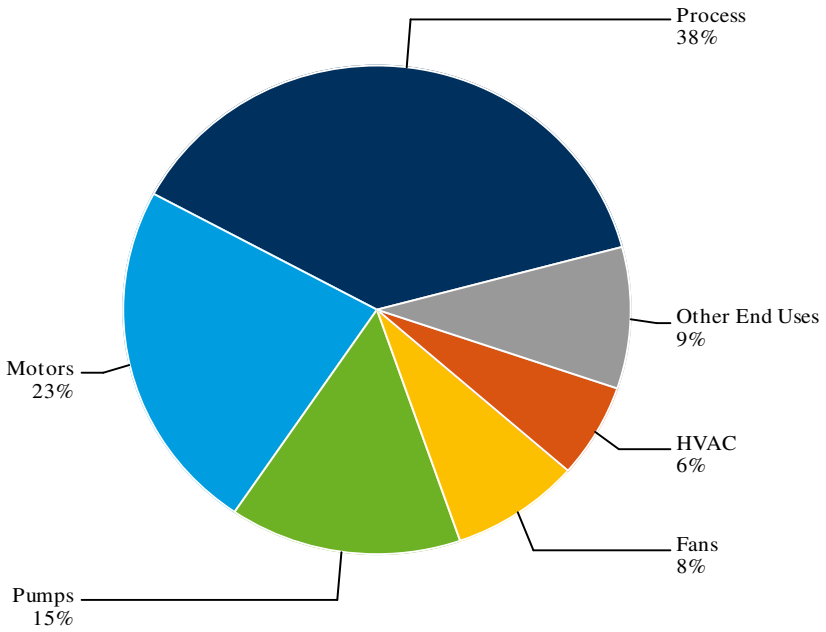
Total: 30 aMW



Note: 'Other End Uses' includes:
HVAC: 3%, Lighting: 2%, Other: 1%, Indirect Boiler: <1%, Process Electro Chemical: <1%

Figure C-3B.150. Baseline Sales 2032 - Wyoming: Industrial Stone Clay Glass Products by End Use

Total: 60 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Other: 4%

Figure C-3B.151. Baseline Sales 2032 - Wyoming: Industrial Transportation by End Use

Total: 30 aMW

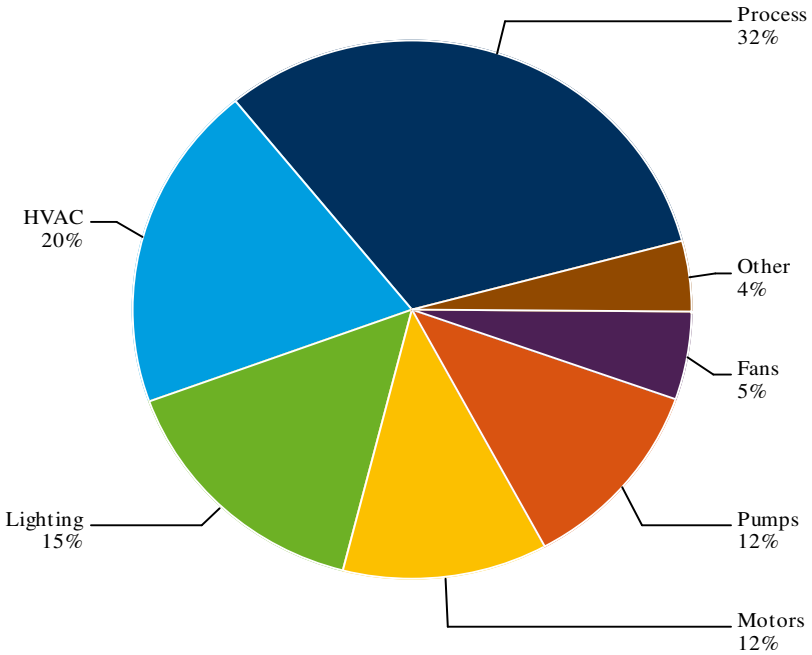
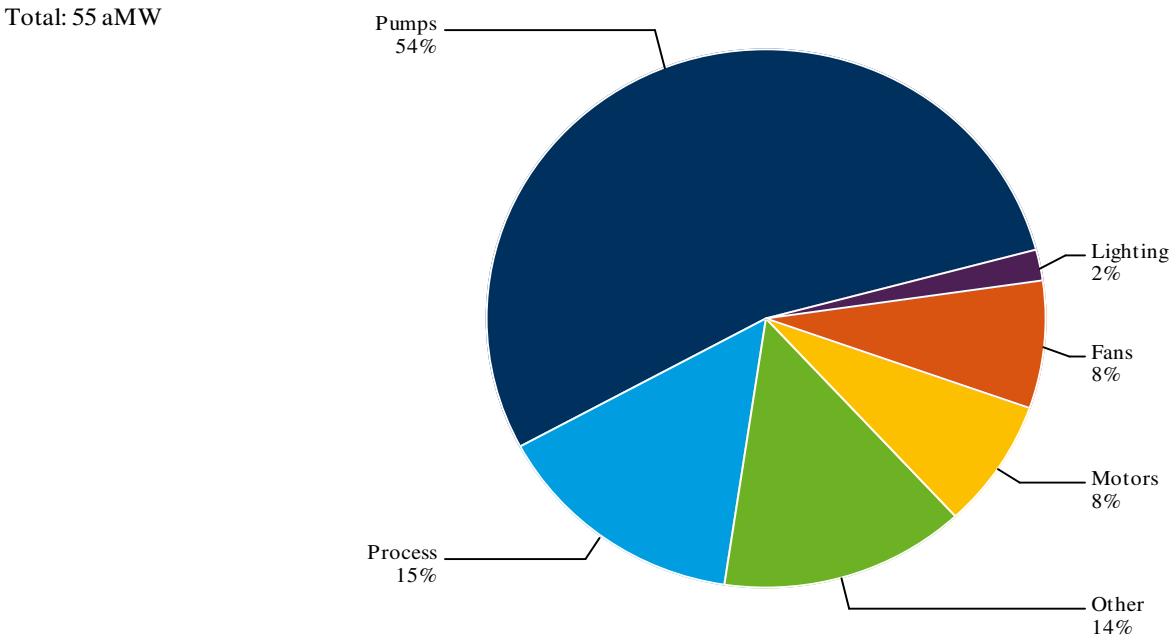


Figure C-3B.152. Baseline Sales 2032 - Wyoming: Industrial Water/Wastewater by End Use



APPENDIX C-4. ACHIEVABLE TECHNICAL POTENTIAL PIE CHARTS

Appendix C-4 presents achievable technical potential in 2032 by state, sector, segment, and end use in aMW at generator.

Figure C-4.1. Achievable Technical Potential - California: Residential by Segment

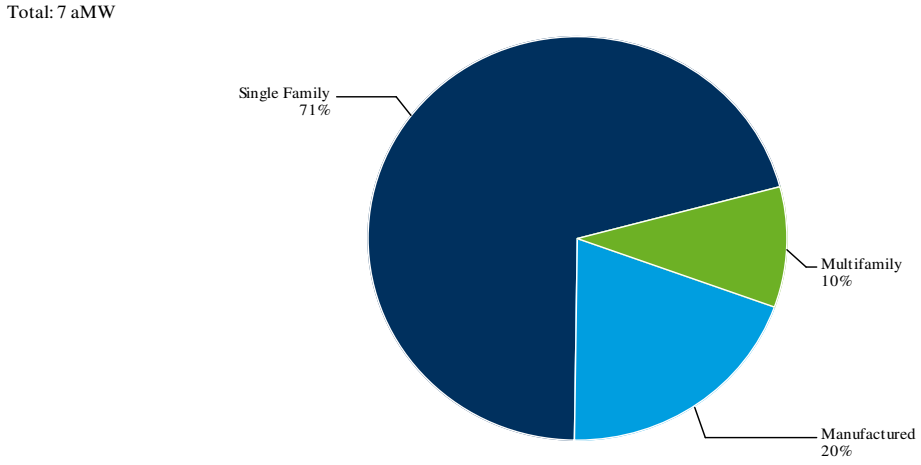


Figure C-4.2. Achievable Technical Potential - Idaho: Residential by Segment

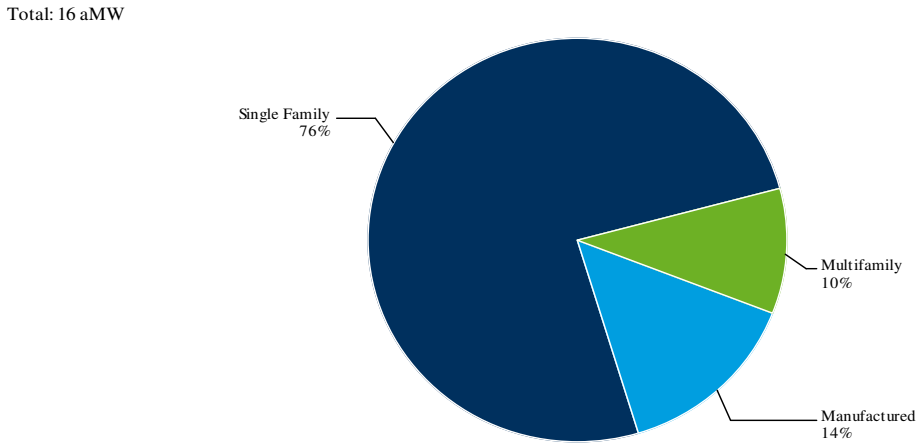


Figure C-4.3. Achievable Technical Potential - Utah: Residential by Segment

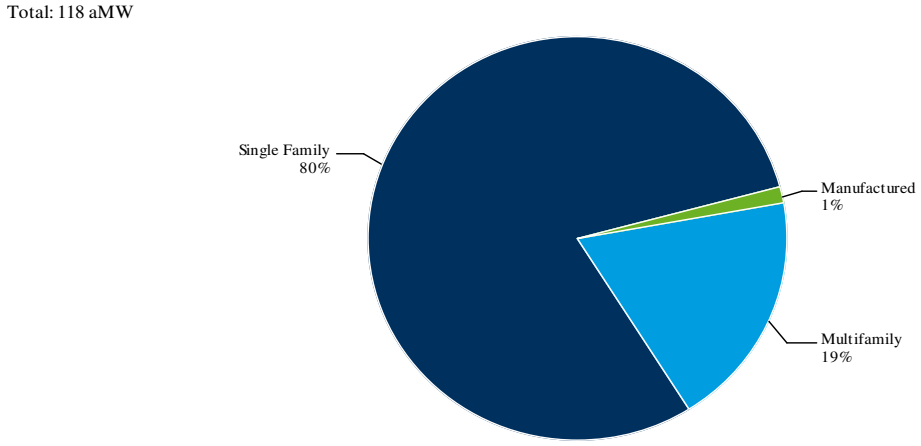


Figure C-4.4. Achievable Technical Potential - Washington: Residential by Segment

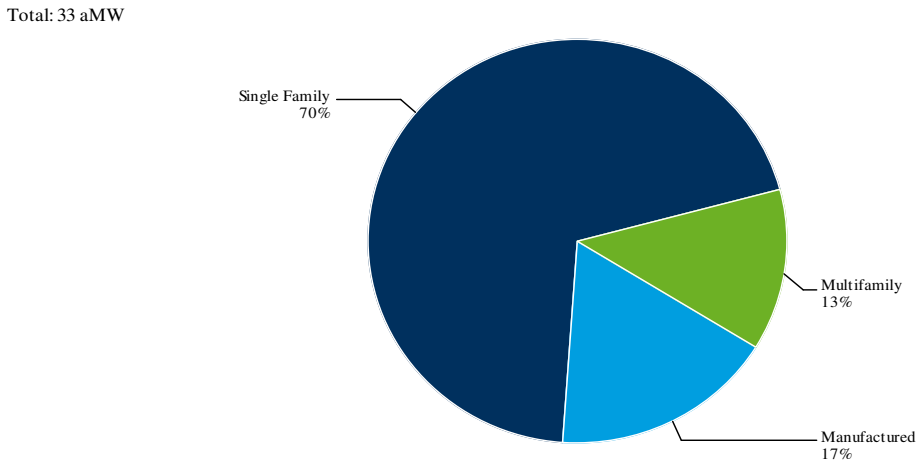


Figure C-4.5. Achievable Technical Potential - Wyoming: Residential by Segment

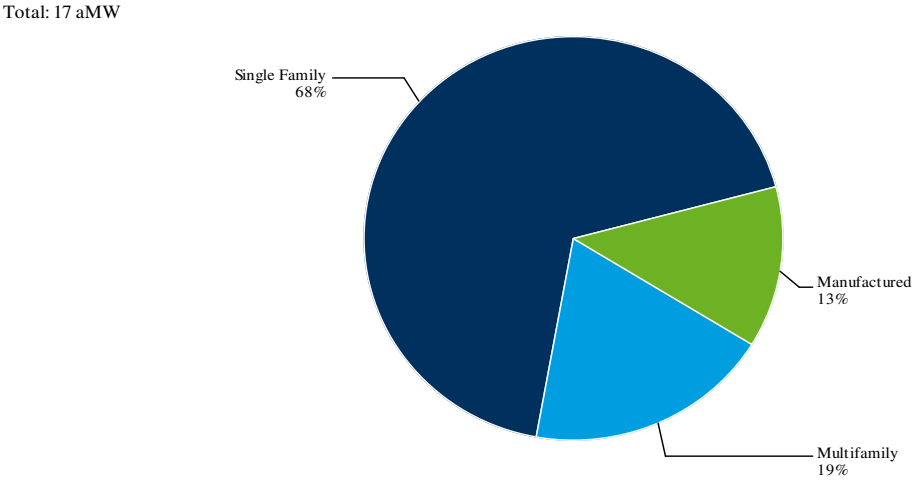
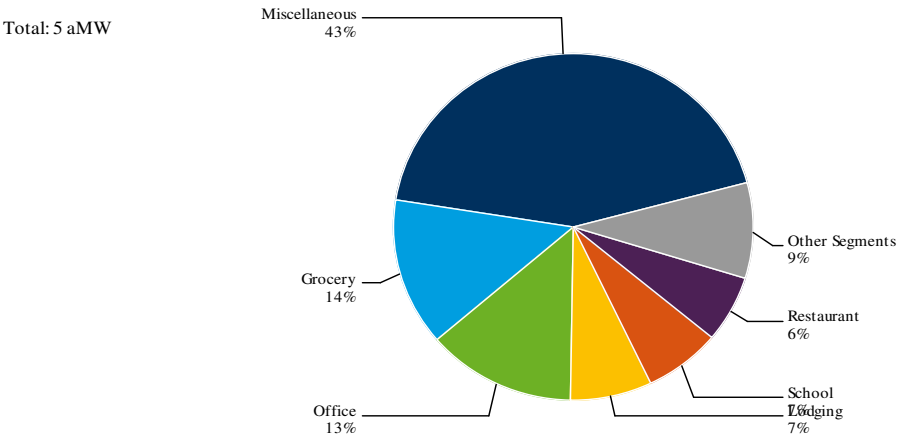


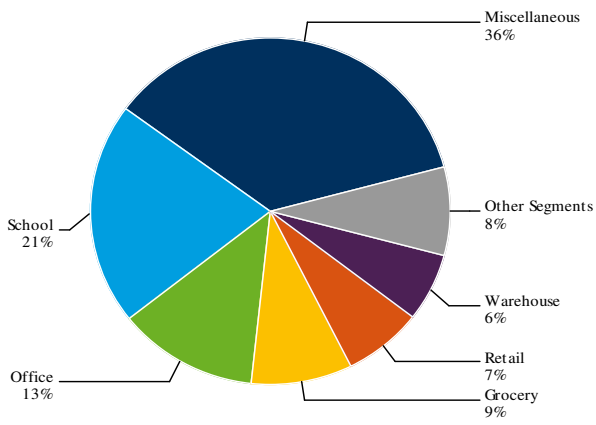
Figure C-4.6. Achievable Technical Potential - California: Commercial by Segment



Note: 'Other Segments' includes:
Retail: 4%, Health: 4%, Warehouse: 2%

Figure C-4.7. Achievable Technical Potential - Idaho: Commercial by Segment

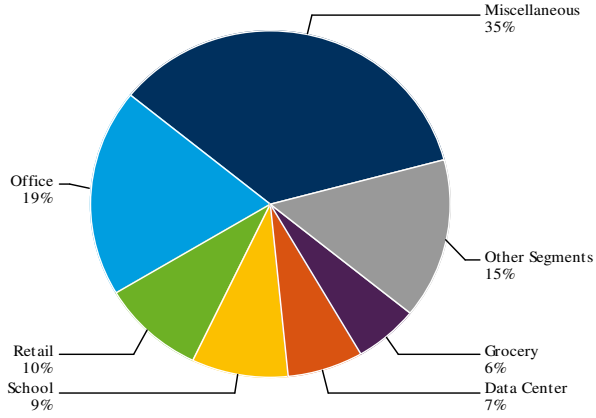
Total: 9 aMW



Note: 'Other Segments' includes:
Restaurant: 4%, Health: 3%, Lodging: 2%

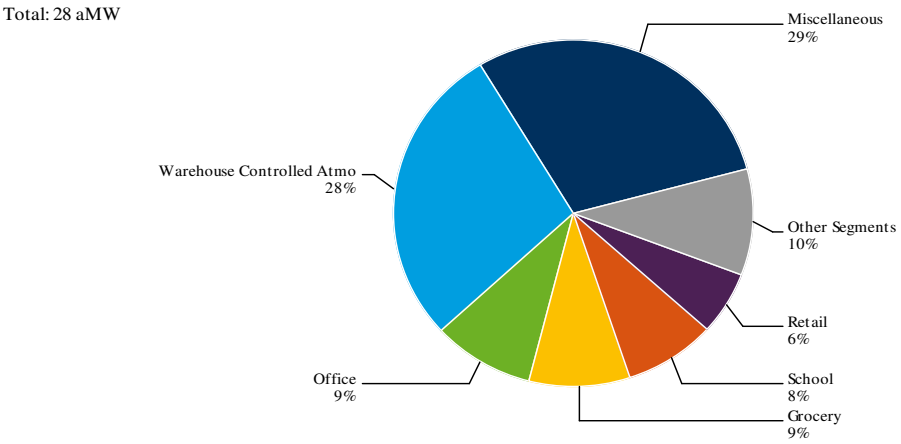
Figure C-4.8. Achievable Technical Potential - Utah: Commercial by Segment

Total: 163 aMW



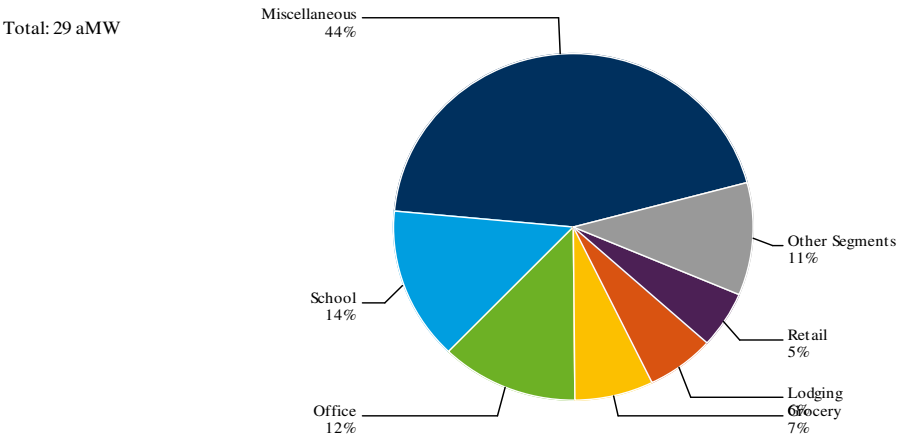
Note: 'Other Segments' includes:
Restaurant: 4%, Warehouse: 4%, Lodging: 3%, Health: 3%

Figure C-4.9. Achievable Technical Potential - Washington: Commercial by Segment



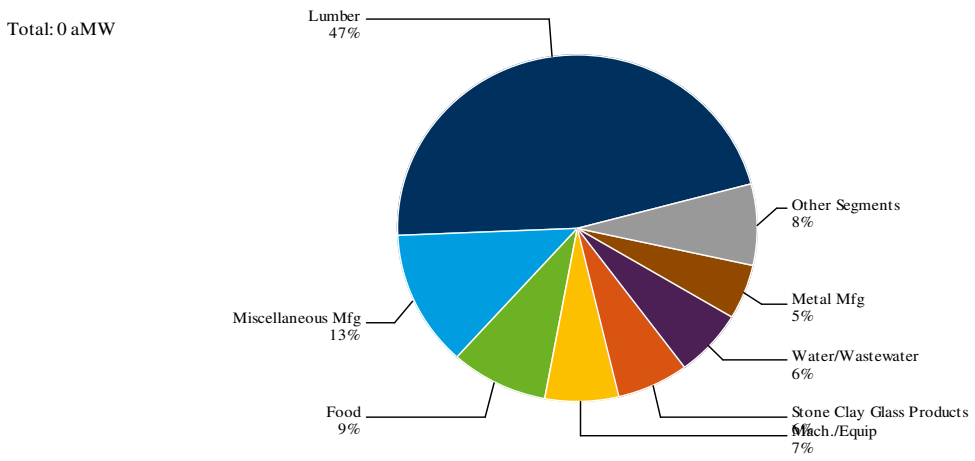
Note: 'Other Segments' includes:
Restaurant: 4%, Health: 4%, Lodging: 2%, Warehouse: <1%

Figure C-4.10. Achievable Technical Potential - Wyoming: Commercial by Segment



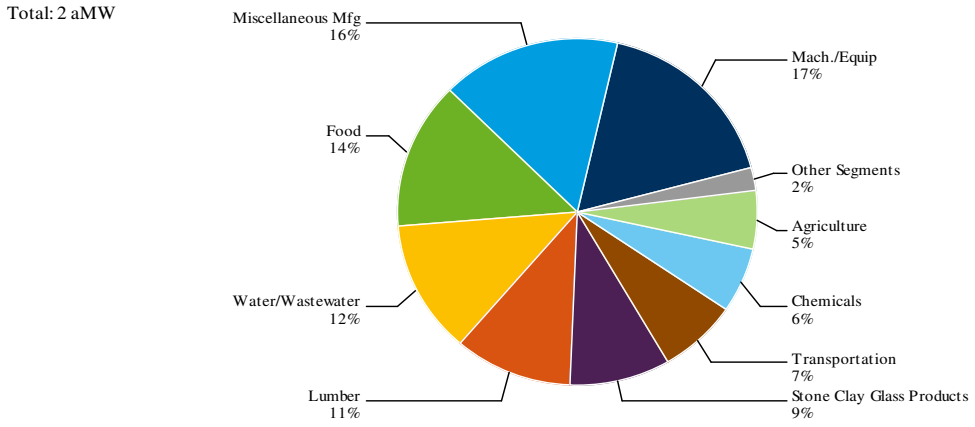
Note: 'Other Segments' includes:
Restaurant: 4%, Health: 4%, Warehouse: 2%

Figure C-4.11. Achievable Technical Potential - California: Industrial by Segment



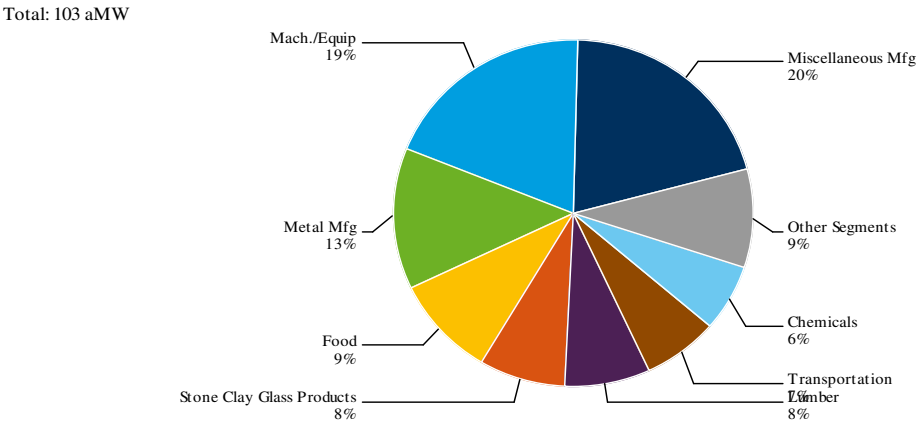
Note: 'Other Segments' includes:
Agriculture: 3%, Transportation: 2%, Petroleum: 2%

Figure C-4.12. Achievable Technical Potential - Idaho: Industrial by Segment



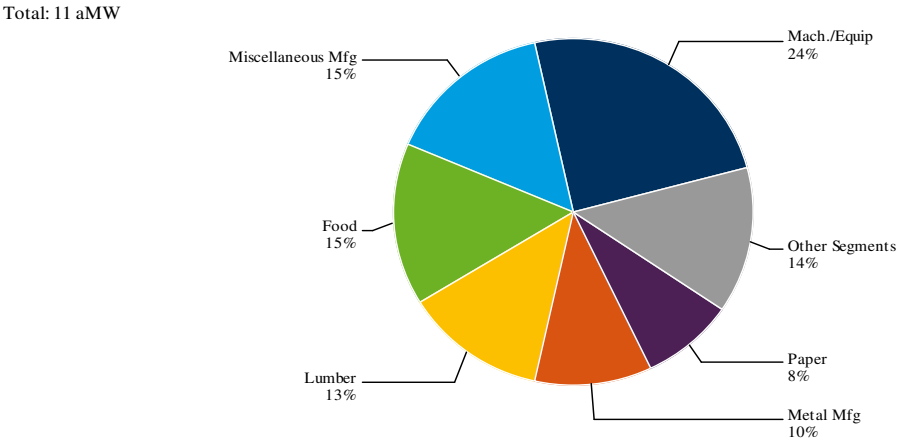
Note: 'Other Segments' includes:
Petroleum: 1%, Metal Mfg: 1%

Figure C-4.13. Achievable Technical Potential - Utah: Industrial by Segment



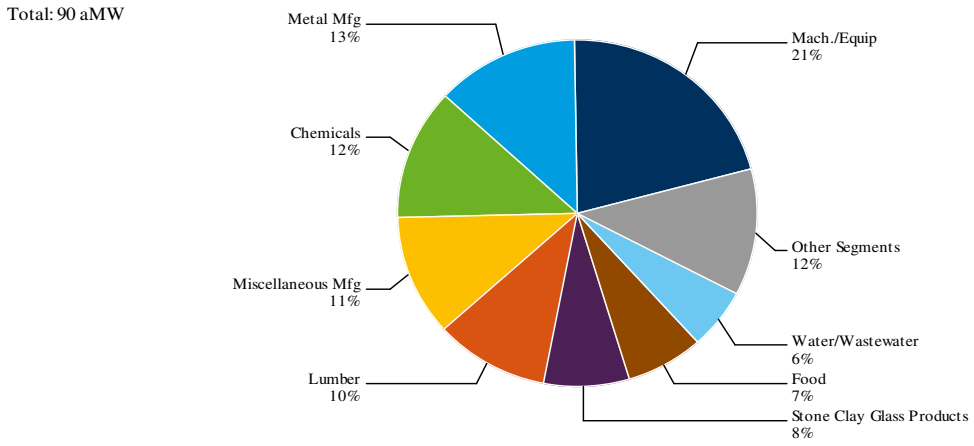
Note: 'Other Segments' includes:
Water/Wastewater: 3%, Paper: 3%, Petroleum: 1%, Mining: <1%, Agriculture: <1%

Figure C-4.14. Achievable Technical Potential - Washington: Industrial by Segment



Note: 'Other Segments' includes:
Water/Wastewater: 4%, Stone Clay Glass Products: 4%, Agriculture: 2%, Transportation: 2%, Petroleum: 1%, Chemicals: 1%

Figure C-4.15. Achievable Technical Potential - Wyoming: Industrial by Segment



Note: 'Other Segments' includes:
Transportation: 4%, Mining: 3%, Petroleum: 3%, Agriculture: <1%

Figure C-4.16. Achievable Technical Potential - California: Street Lighting by Segment

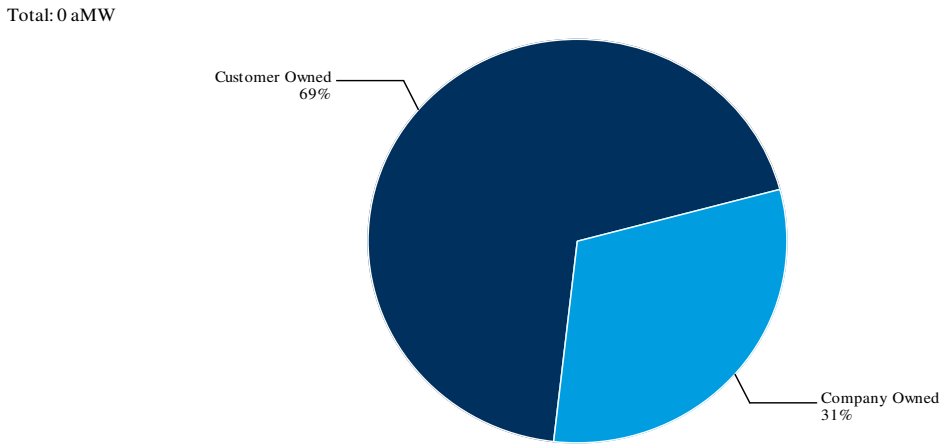


Figure C-4.17. Achievable Technical Potential - Idaho: Street Lighting by Segment

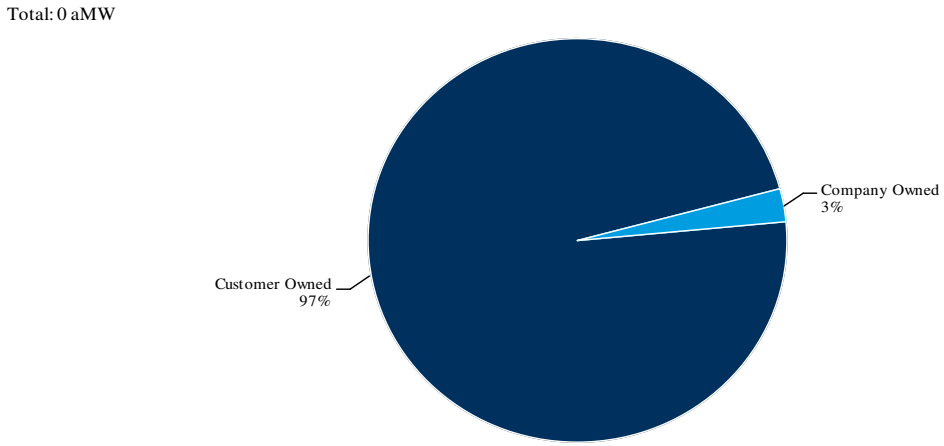


Figure C-4.18. Achievable Technical Potential - Utah: Street Lighting by Segment

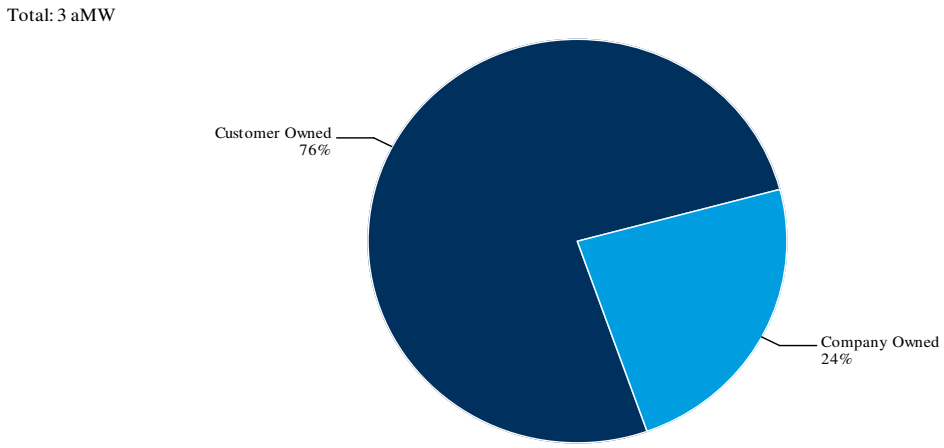


Figure C-4.19. Achievable Technical Potential - Washington: Street Lighting by Segment

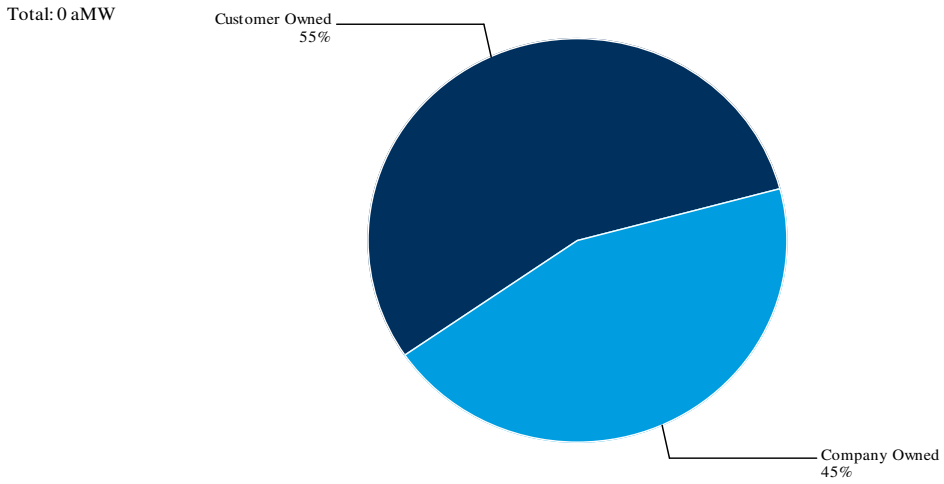


Figure C-4.20. Achievable Technical Potential - Wyoming: Street Lighting by Segment

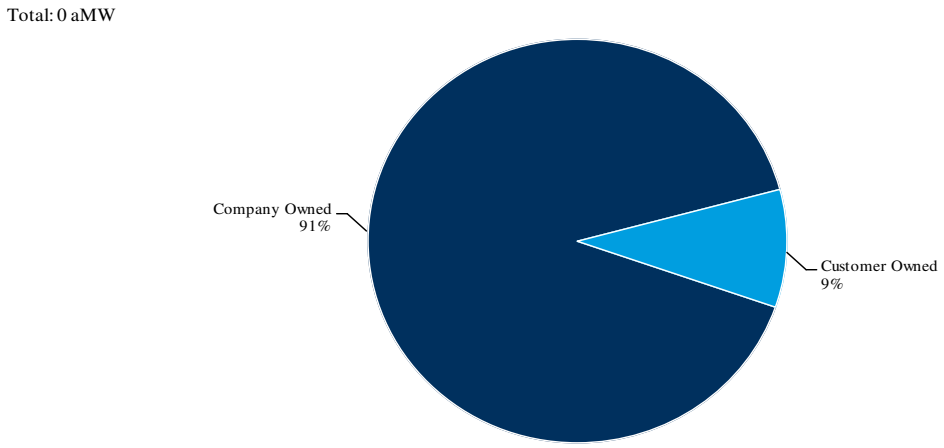
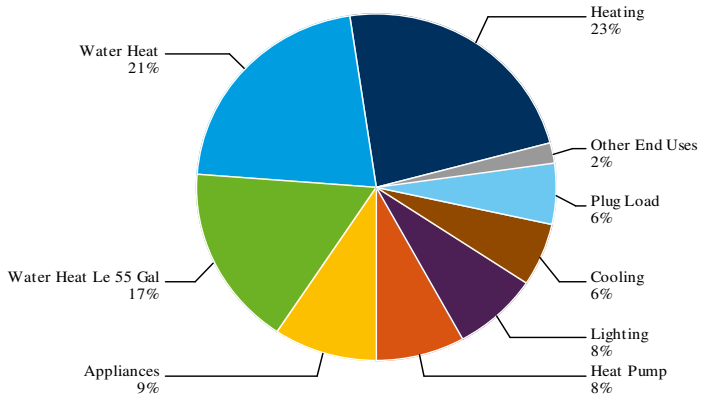


Figure C-4.21. Achievable Technical Potential - California: Residential by End Use

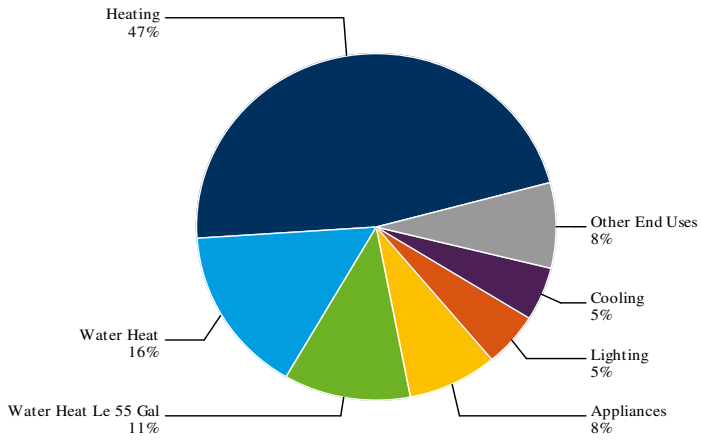
Total: 7 aMW



Note: 'Other End Uses' includes:
Water Heat Gt 55 Gal: 1%, Ventilation And Circulation: <1%, Pool Pump: <1%, Cooking: <1%

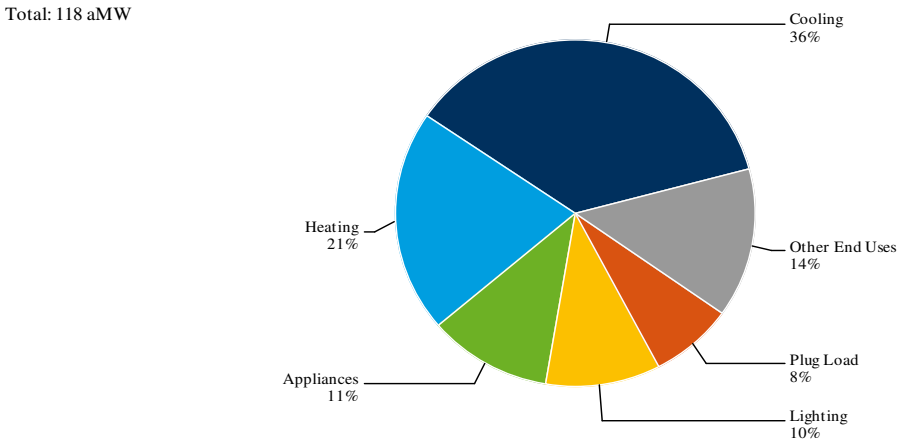
Figure C-4.22. Achievable Technical Potential - Idaho: Residential by End Use

Total: 16 aMW



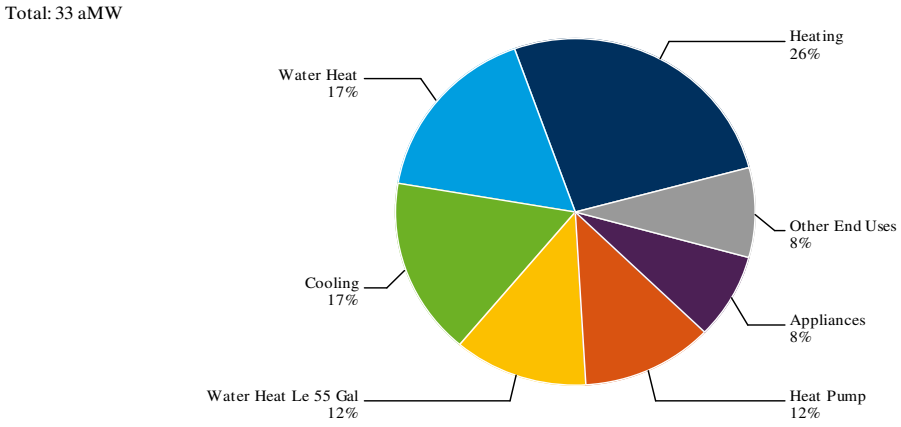
Note: 'Other End Uses' includes:
Plug Load: 5%, Ventilation And Circulation: 2%, Heat Pump: <1%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.23. Achievable Technical Potential - Utah: Residential by End Use



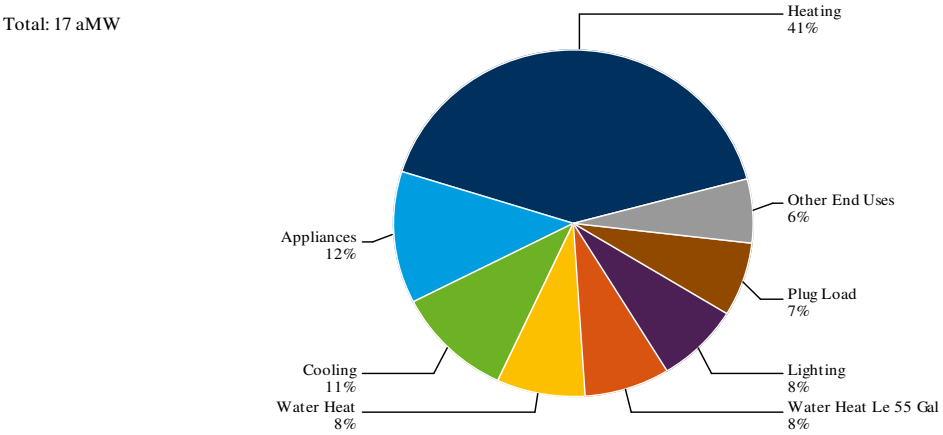
Note: 'Other End Uses' includes:
Water Heat: 5%, Water Heat Le 55 Gal: 4%, Ventilation And Circulation: 3%, Heat Pump: <1%, Pool Pump: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.24. Achievable Technical Potential - Washington: Residential by End Use



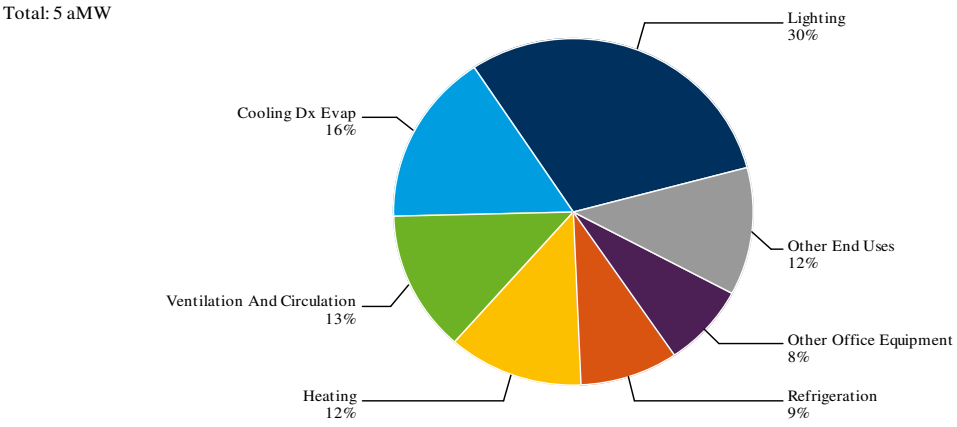
Note: 'Other End Uses' includes:
Plug Load: 4%, Lighting: 3%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.25. Achievable Technical Potential - Wyoming: Residential by End Use



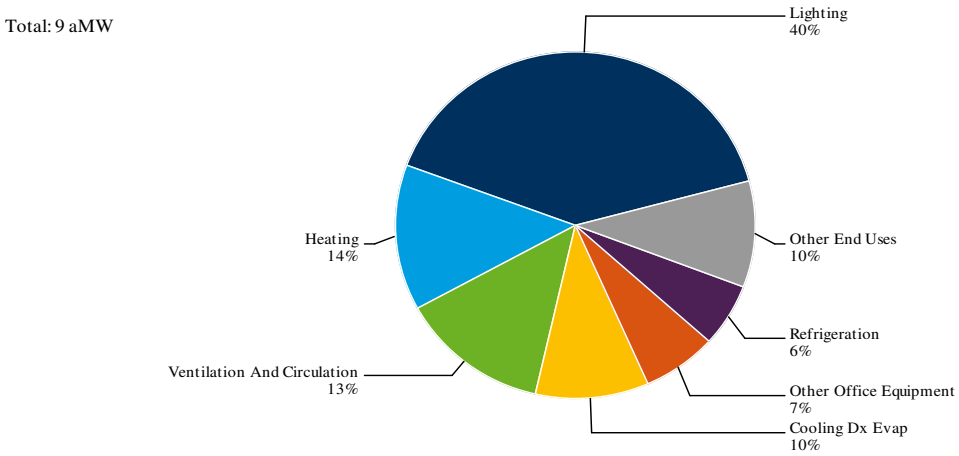
Note: 'Other End Uses' includes:
Ventilation And Circulation: 3%, Heat Pump: 3%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.26. Achievable Technical Potential - California: Commercial by End Use



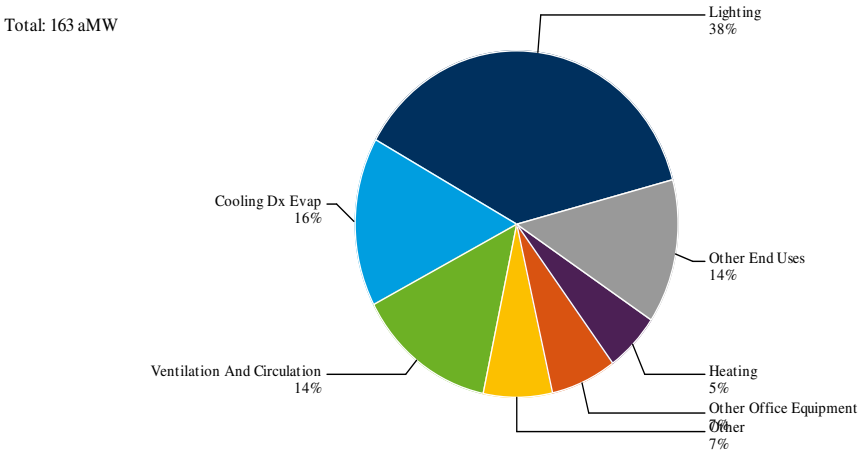
Note: 'Other End Uses' includes:
Water Heat: 3%, Water Heat Le 55 Gal: 3%, Heat Pump: 2%, Cooling: 2%, Cooking: <1%, Lighting Interior Hid: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.27. Achievable Technical Potential - Idaho: Commercial by End Use



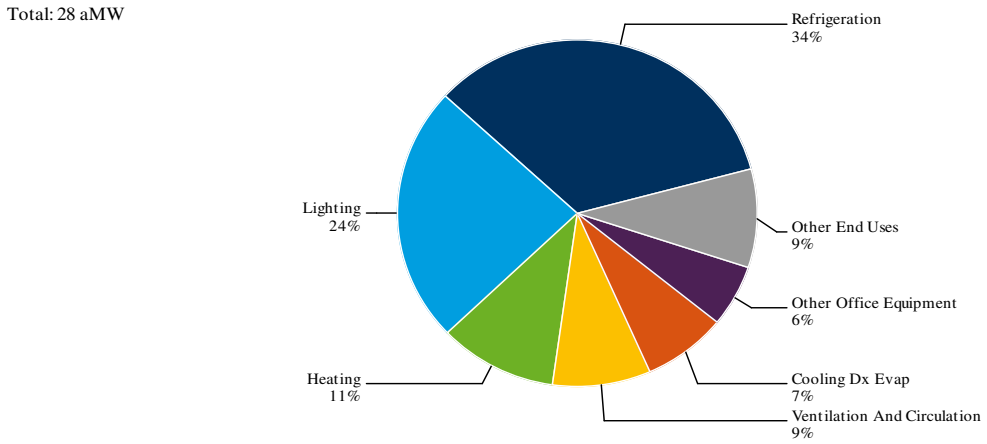
Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 2%, Water Heat Le 55 Gal: 2%, Cooling: 1%, Lighting Interior Hid: <1%, Appliances: <1%, Cooking: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.28. Achievable Technical Potential - Utah: Commercial by End Use



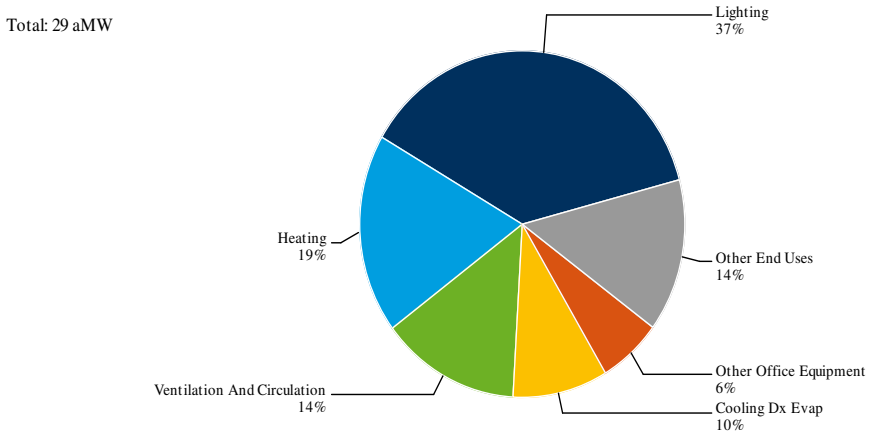
Note: 'Other End Uses' includes:
Refrigeration: 4%, Cooling: 3%, Heat Pump: 3%, Water Heat: 2%, Lighting Interior Hid: <1%, Water Heat Le 55 Gal: <1%, Appliances: <1%, Cooking: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.29. Achievable Technical Potential - Washington: Commercial by End Use



Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 3%, Water Heat Le 55 Gal: 1%, Cooling: 1%, Lighting Interior Hid: <1%, Appliances: <1%, Cooking: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.30. Achievable Technical Potential - Wyoming: Commercial by End Use



Note: 'Other End Uses' includes:
Refrigeration: 5%, Heat Pump: 3%, Water Heat: 2%, Cooling: 1%, Water Heat Le 55 Gal: 1%, Lighting Interior Hid: <1%, Appliances: <1%, Cooking: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.31. Achievable Technical Potential - California: Industrial by End Use

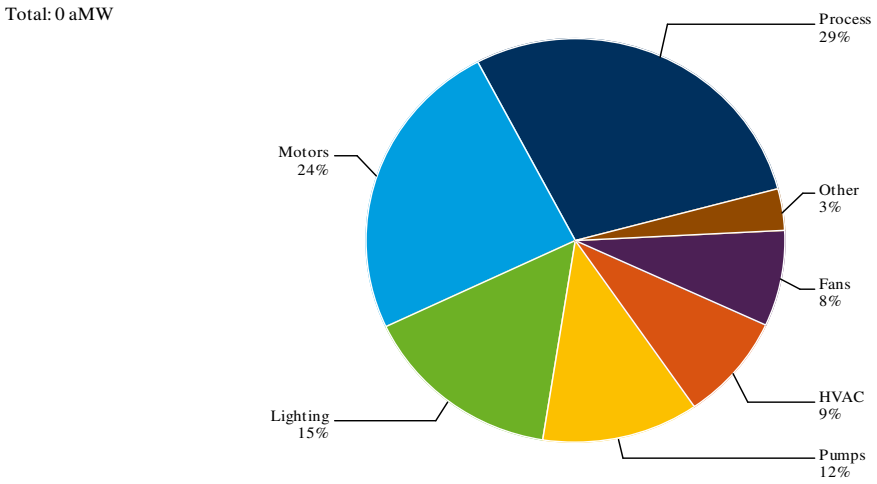


Figure C-4.32. Achievable Technical Potential - Idaho: Industrial by End Use

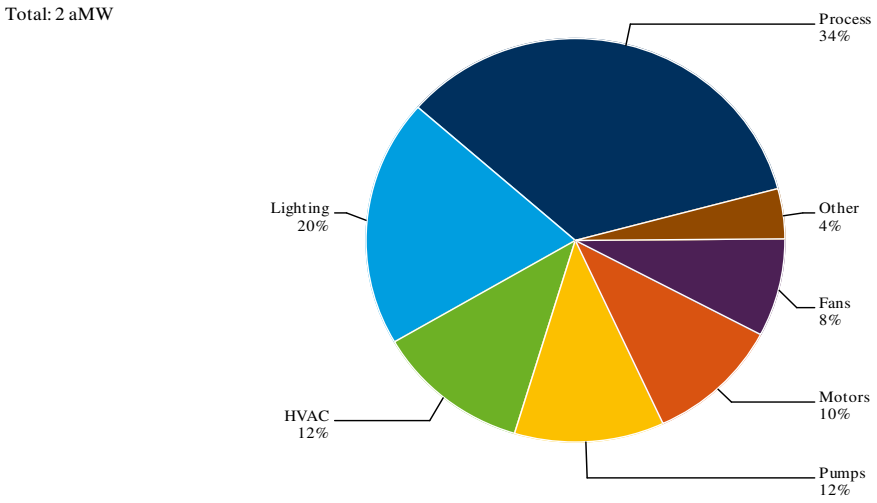


Figure C-4.33. Achievable Technical Potential - Utah: Industrial by End Use

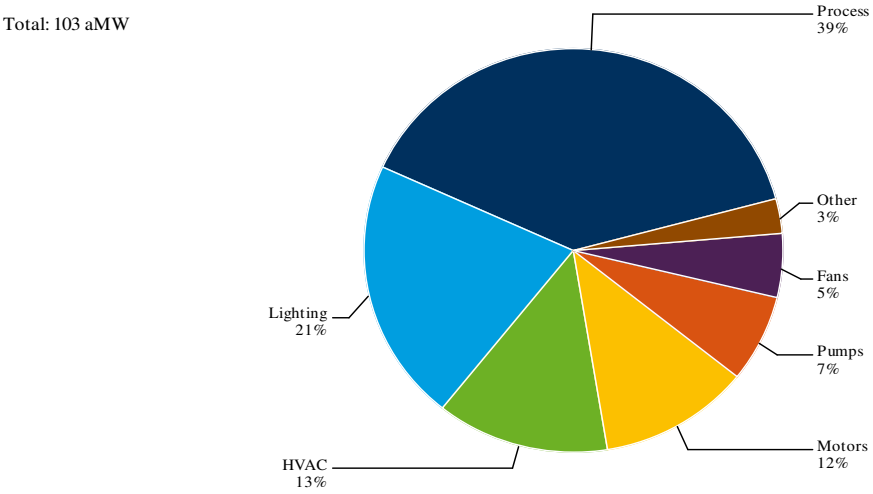


Figure C-4.34. Achievable Technical Potential - Washington: Industrial by End Use

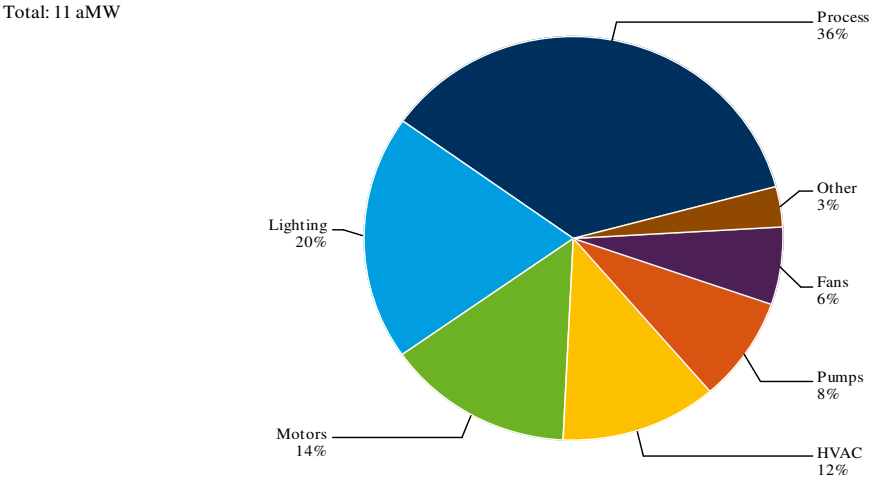


Figure C-4.35. Achievable Technical Potential - Wyoming: Industrial by End Use

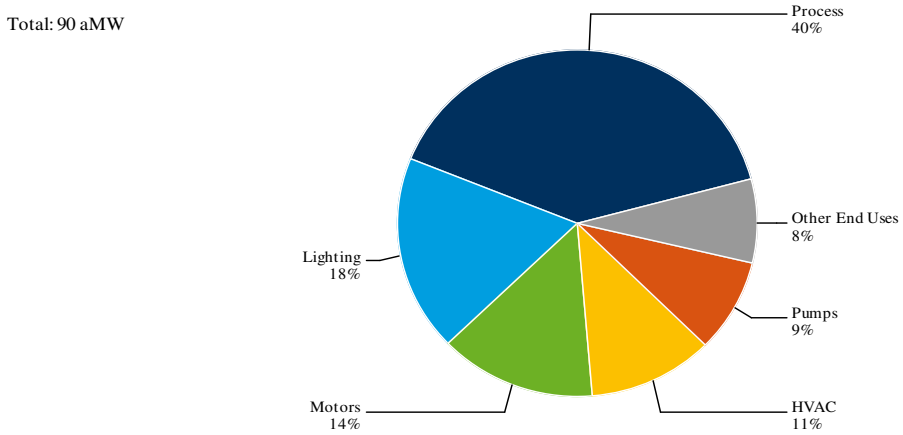


Figure C-4.41 Achievable Technical Potential - California: Street Lighting by End Use

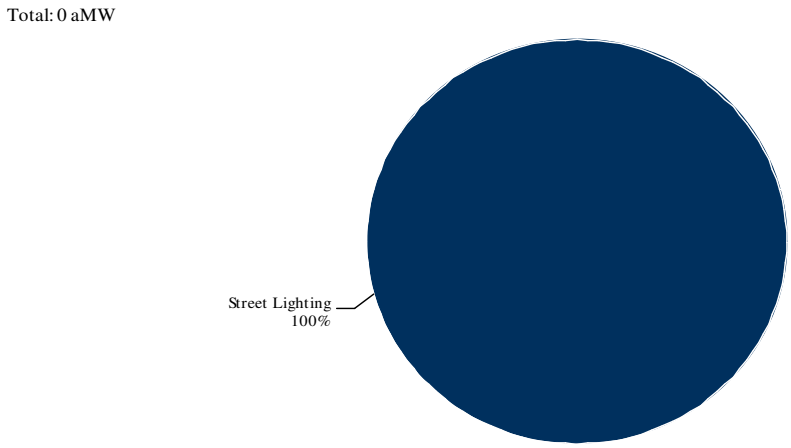


Figure C-4.36. Achievable Technical Potential - Idaho: Street Lighting by End Use

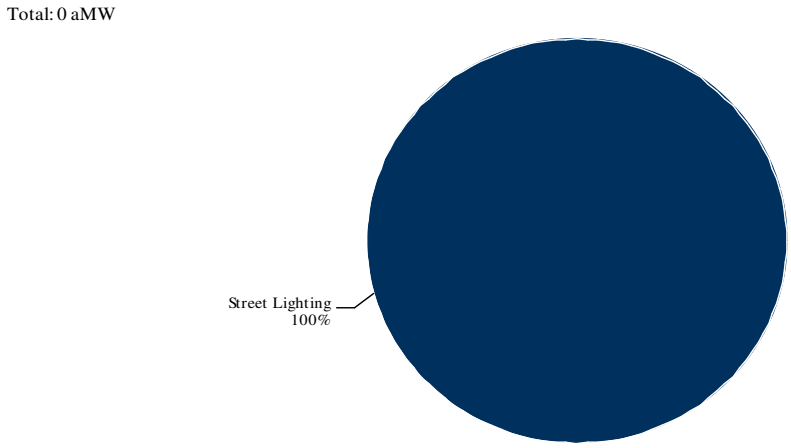


Figure C-4.37. Achievable Technical Potential - Utah: Street Lighting by End Use

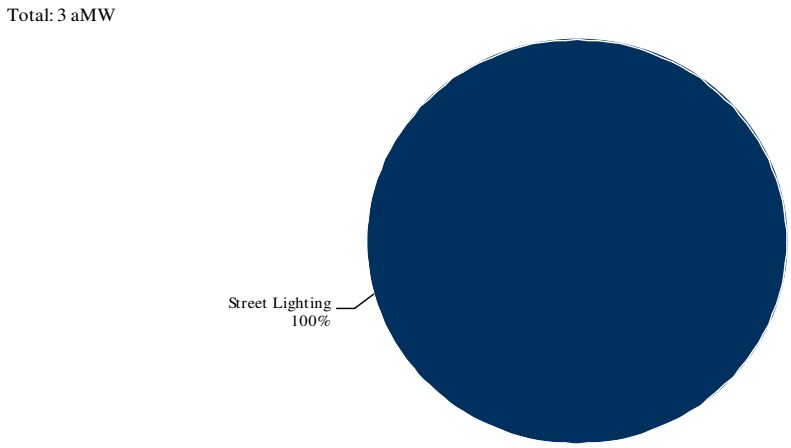


Figure C-4.38. Achievable Technical Potential - Washington: Street Lighting by End Use

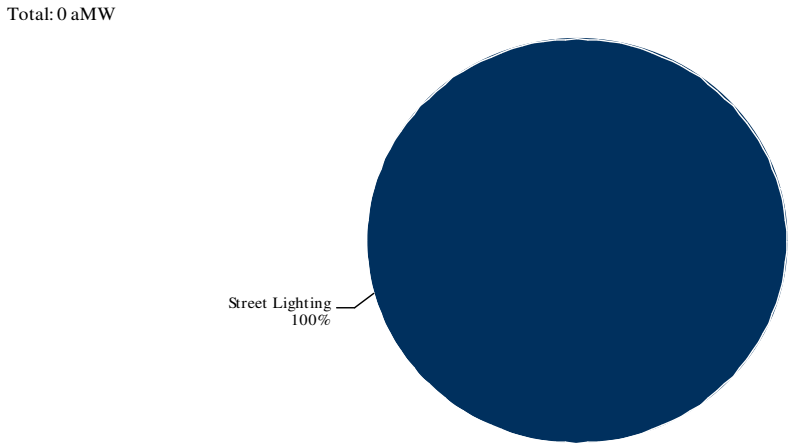


Figure C-4.39. Achievable Technical Potential - Wyoming: Street Lighting by End Use

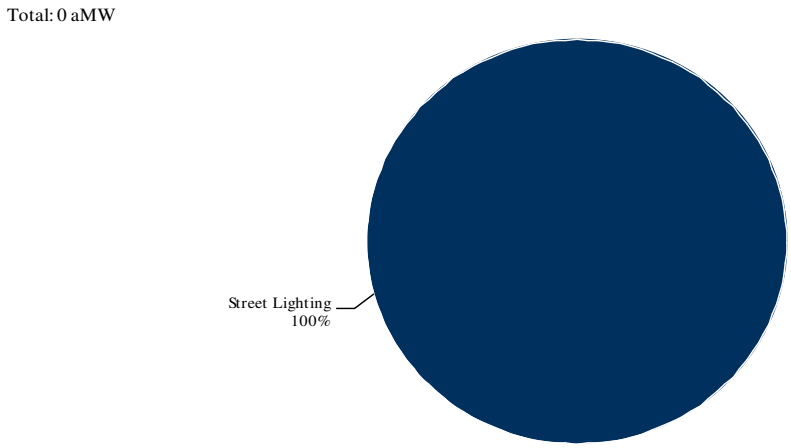
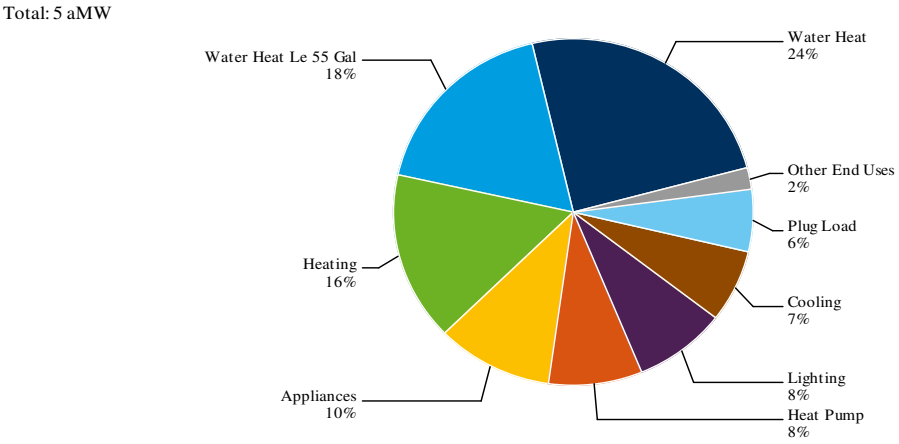
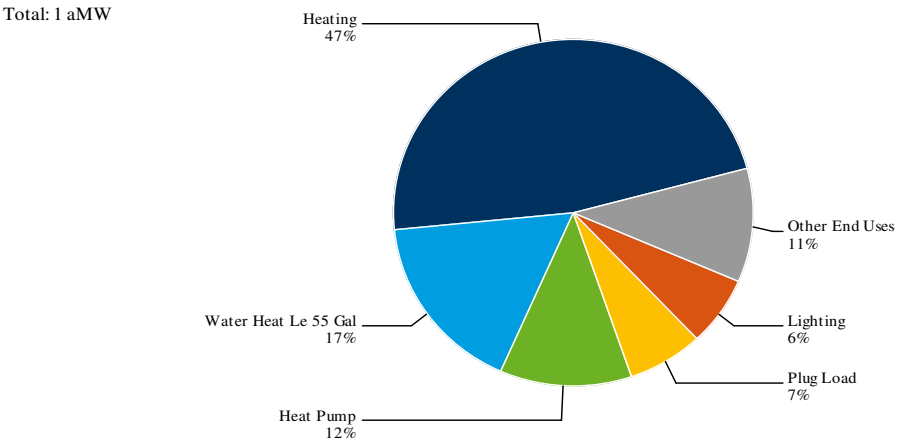


Figure C-4.40. Achievable Technical Potential - California: Residential Single Family by End Use



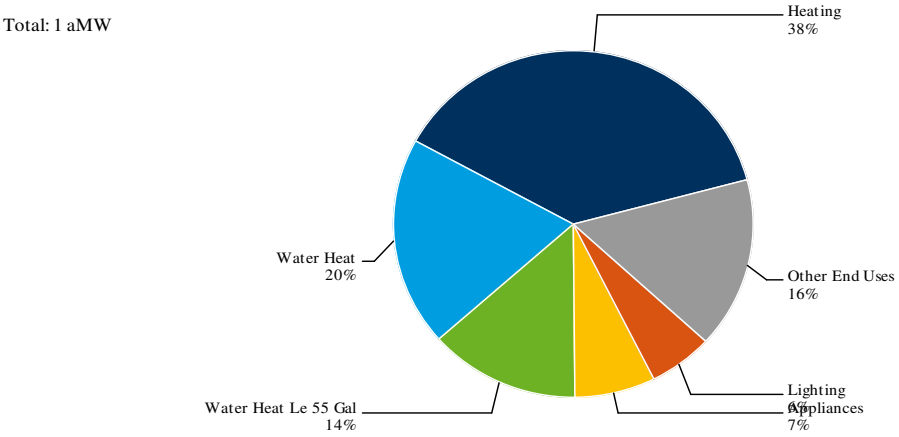
Note: 'Other End Uses' includes:
Water Heat Gt 55 Gal: 1%, Ventilation And Circulation: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.41. Achievable Technical Potential - California: Residential Multifamily by End Use



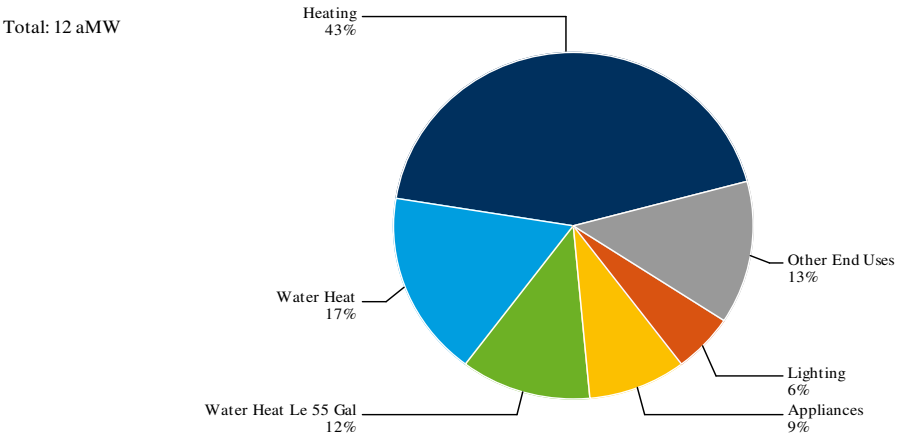
Note: 'Other End Uses' includes:
Appliances: 4%, Water Heat: 3%, Cooling: 2%, Water Heat Gt 55 Gal: <1%, Ventilation And Circulation: <1%, Cooking: <1%

Figure C-4.42. Achievable Technical Potential - California: Residential Manufactured by End Use



Note: 'Other End Uses' includes:
Cooling: 5%, Heat Pump: 5%, Plug Load: 5%, Ventilation And Circulation: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

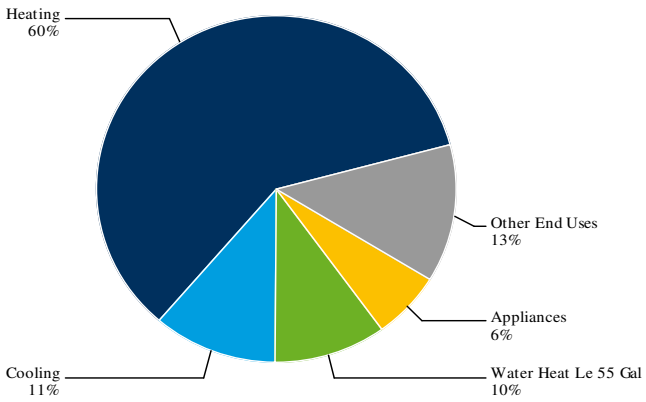
Figure C-4.43. Achievable Technical Potential - Idaho: Residential Single Family by End Use



Note: 'Other End Uses' includes:
Cooling: 5%, Plug Load: 5%, Ventilation And Circulation: 2%, Heat Pump: 1%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.44. Achievable Technical Potential - Idaho: Residential Multifamily by End Use

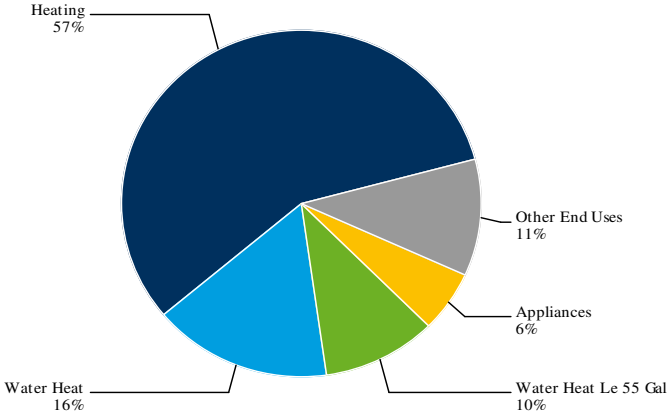
Total: 2 aMW



Note: 'Other End Uses' includes:
Plug Load: 5%, Lighting: 4%, Water Heat: 2%, Ventilation And Circulation: 1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.45. Achievable Technical Potential - Idaho: Residential Manufactured by End Use

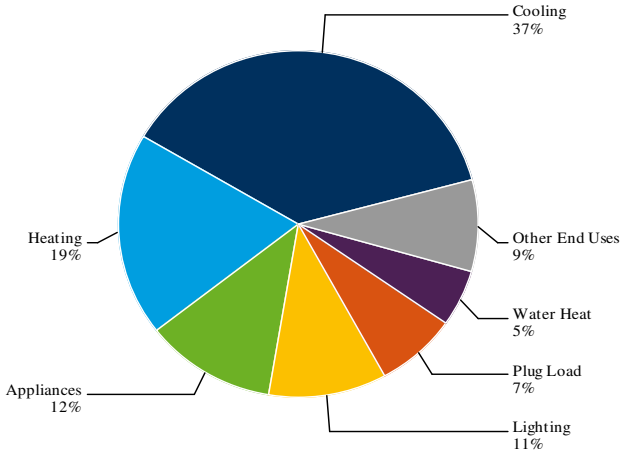
Total: 2 aMW



Note: 'Other End Uses' includes:
Plug Load: 3%, Lighting: 3%, Cooling: 2%, Ventilation And Circulation: 1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.46. Achievable Technical Potential - Utah: Residential Single Family by End Use

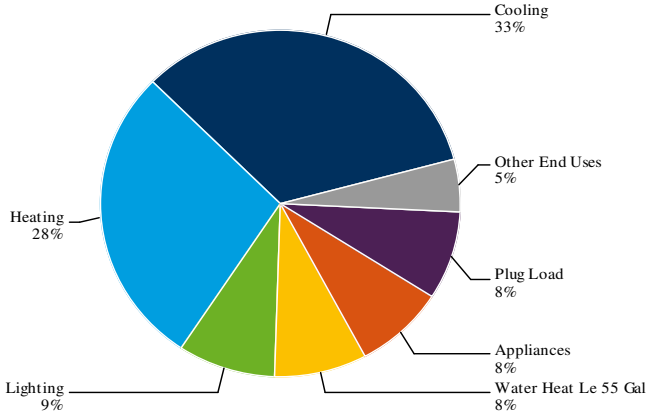
Total: 94 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 4%, Water Heat Le 55 Gal: 3%, Heat Pump: <1%, Pool Pump: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.47. Achievable Technical Potential - Utah: Residential Multifamily by End Use

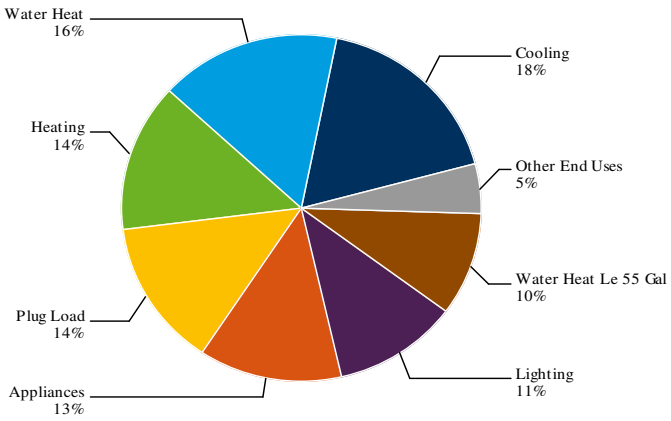
Total: 22 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 3%, Water Heat: 2%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.48. Achievable Technical Potential - Utah: Residential Manufactured by End Use

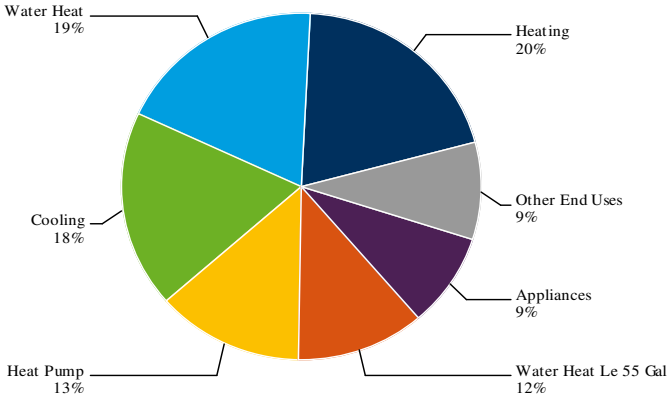
Total: 2 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 4%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

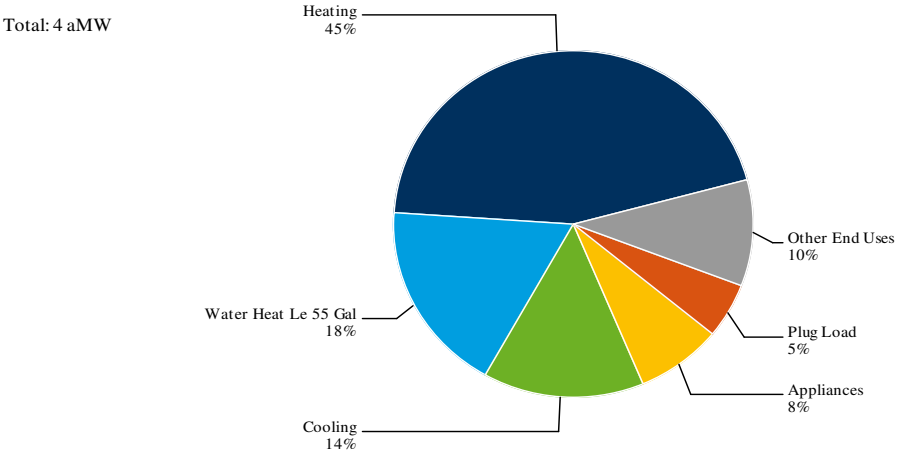
Figure C-4.49. Achievable Technical Potential - Washington: Residential Single Family by End Use

Total: 23 aMW



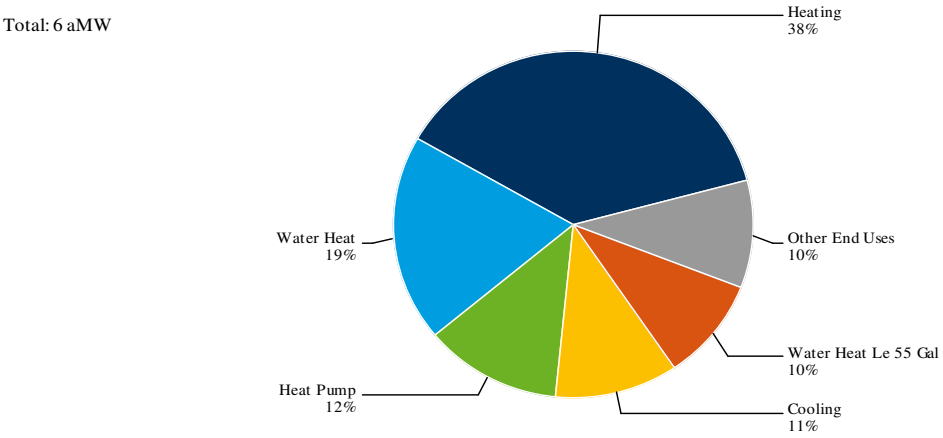
Note: 'Other End Uses' includes:
Plug Load: 4%, Lighting: 4%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.50. Achievable Technical Potential - Washington: Residential Multifamily by End Use



Note: 'Other End Uses' includes:
Heat Pump: 3%, Lighting: 3%, Water Heat: 3%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

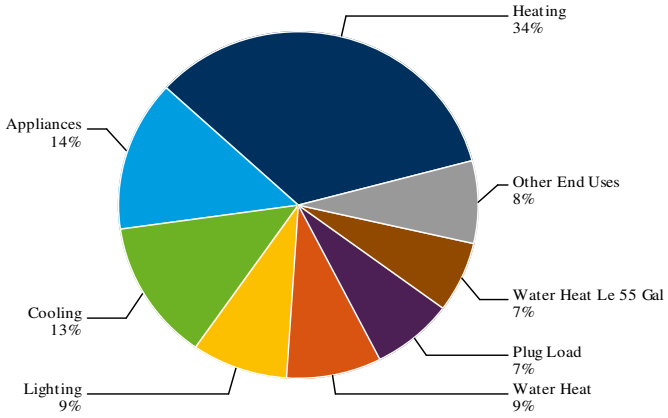
Figure C-4.51. Achievable Technical Potential - Washington: Residential Manufactured by End Use



Note: 'Other End Uses' includes:
Appliances: 5%, Plug Load: 3%, Lighting: 2%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.52. Achievable Technical Potential - Wyoming: Residential Single Family by End Use

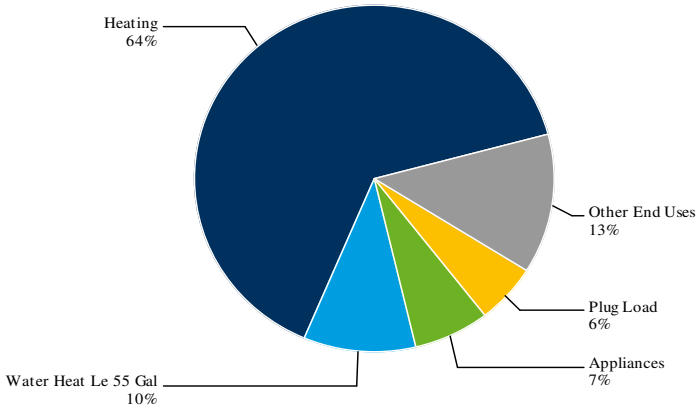
Total: 11 aMW



Note: 'Other End Uses' includes:
Heat Pump: 4%, Ventilation And Circulation: 3%, Water Heat Gt 55 Gal: <1%, Pool Pump: <1%, Cooking: <1%

Figure C-4.53. Achievable Technical Potential - Wyoming: Residential Multifamily by End Use

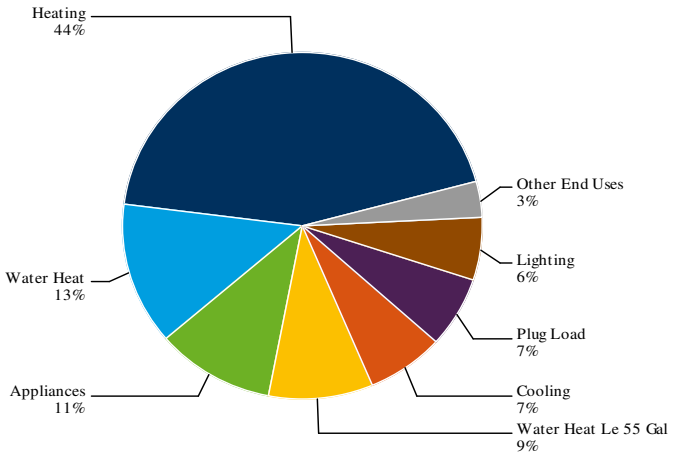
Total: 3 aMW



Note: 'Other End Uses' includes:
Lighting: 5%, Cooling: 5%, Water Heat: 2%, Ventilation And Circulation: 1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.54. Achievable Technical Potential - Wyoming: Residential Manufactured by End Use

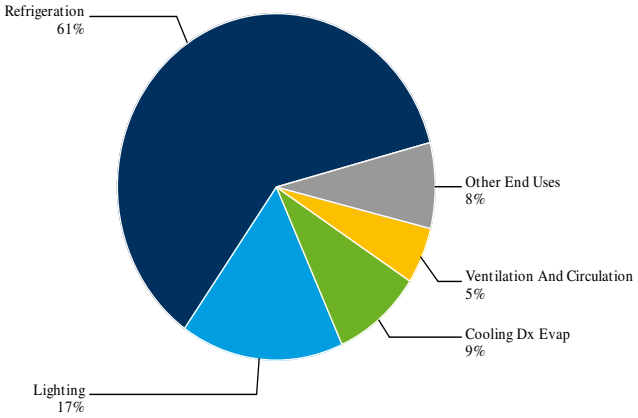
Total: 2 aMW



Note: 'Other End Uses' includes:
Ventilation And Circulation: 3%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.55. Achievable Technical Potential - California: Commercial Grocery by End Use

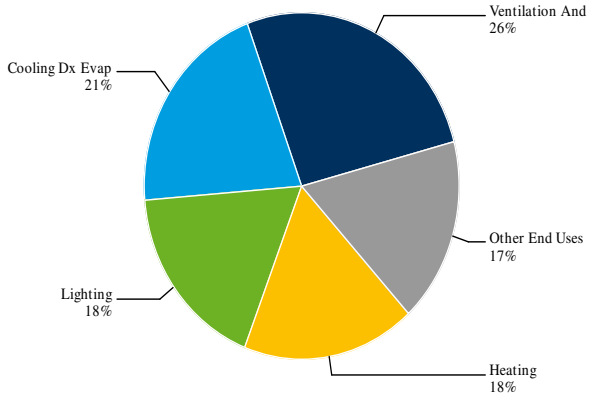
Total: 1 aMW



Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 3%, Heat Pump: 1%, Water Heat Le 55 Gal: <1%, Cooling: <1%, Water Heat: <1%, Cooking: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.56. Achievable Technical Potential - California: Commercial Health by End Use

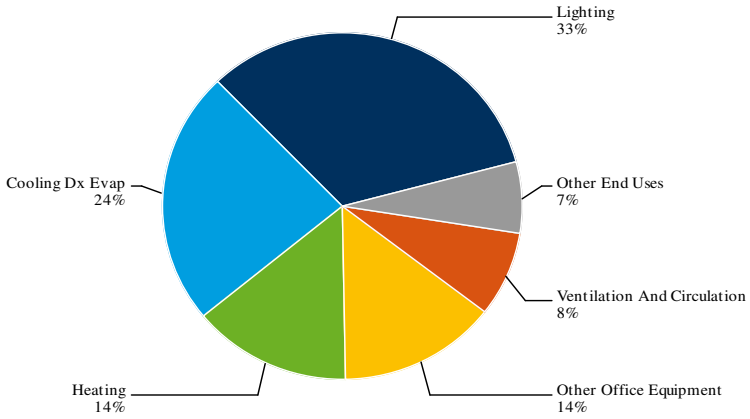
Total: 0 aMW



Note: 'Other End Uses' includes:
Other Office Equipment: 5%, Water Heat: 4%, Cooling: 3%, Heat Pump: 3%, Water Heat Le 55 Gal: 1%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

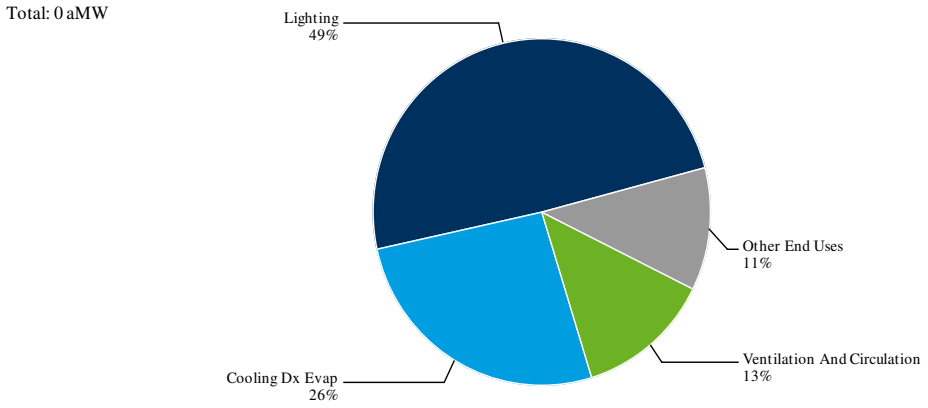
Figure C-4.57. Achievable Technical Potential - California: Commercial Office by End Use

Total: 1 aMW



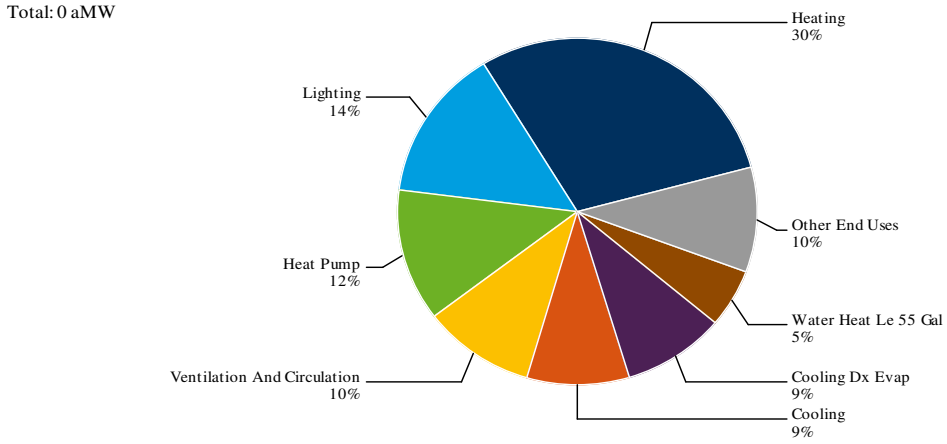
Note: 'Other End Uses' includes:
Water Heat: 4%, Cooling: 1%, Water Heat Le 55 Gal: <1%, Appliances: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.58. Achievable Technical Potential - California: Commercial Retail by End Use



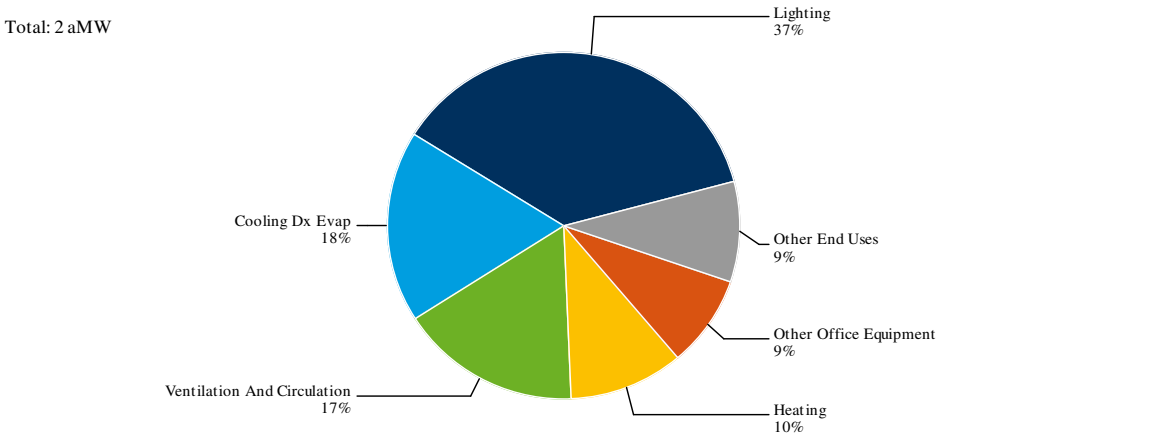
Note: 'Other End Uses' includes:
Heating: 5%, Water Heat: 2%, Other Office Equipment: 2%, Cooling: 1%, Water Heat Le 55 Gal: <1%, Appliances: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.59. Achievable Technical Potential - California: Commercial Lodging by End Use



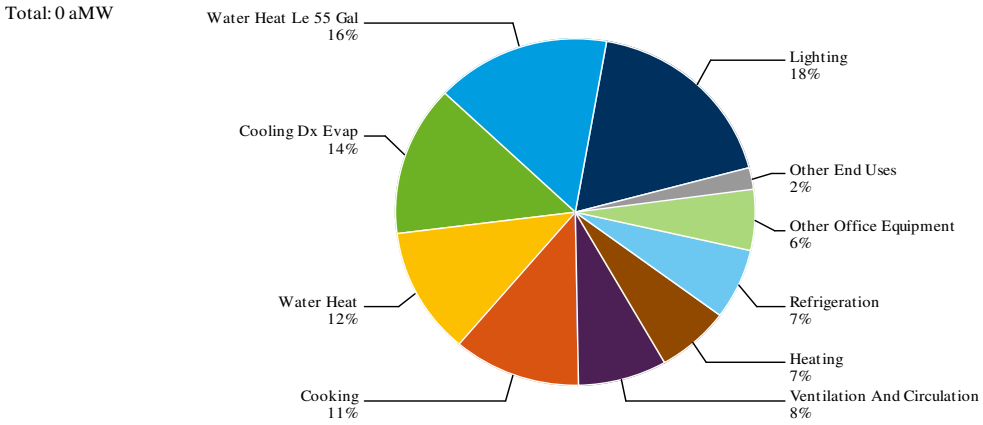
Note: 'Other End Uses' includes:
Other Office Equipment: 5%, Water Heat: 3%, Appliances: 2%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%, Cooking: <1%, Lighting Interior Hid: <1%

Figure C-4.60. Achievable Technical Potential - California: Commercial Miscellaneous by End Use



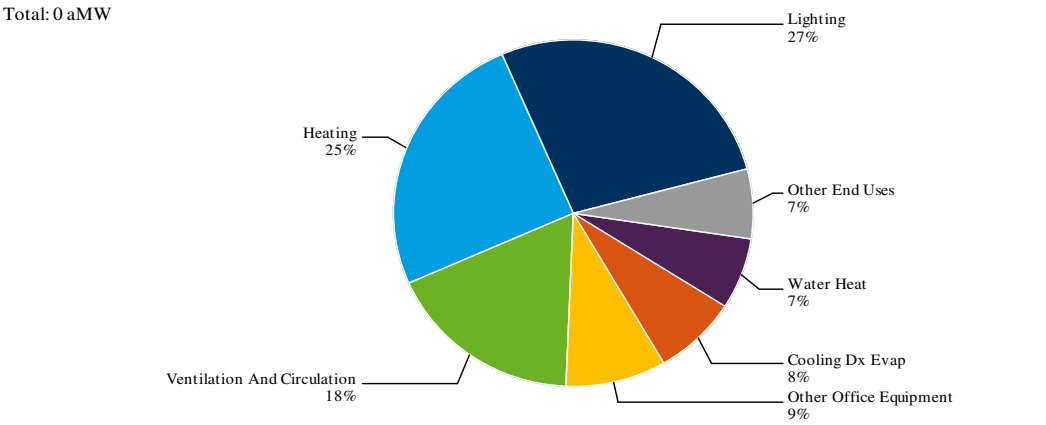
Note: 'Other End Uses' includes:
Water Heat Le 55 Gal: 2%, Water Heat: 2%, Heat Pump: 2%, Lighting Interior Hid: 1%, Cooling: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%

Figure C-4.61. Achievable Technical Potential - California: Commercial Restaurant by End Use



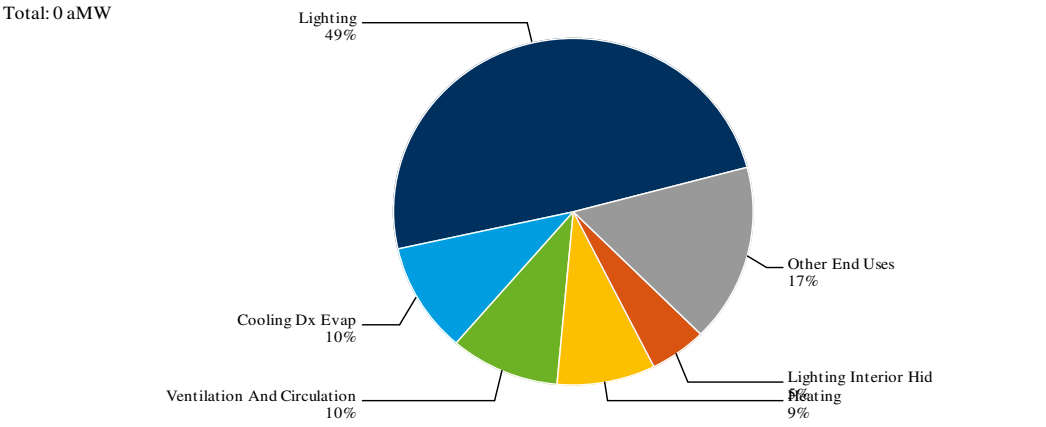
Note: 'Other End Uses' includes:
Water Heat Gt 55 Gal: 1%, Cooling: <1%, Appliances: <1%, Lighting Interior Hid: <1%

Figure C-4.62. Achievable Technical Potential - California: Commercial School by End Use



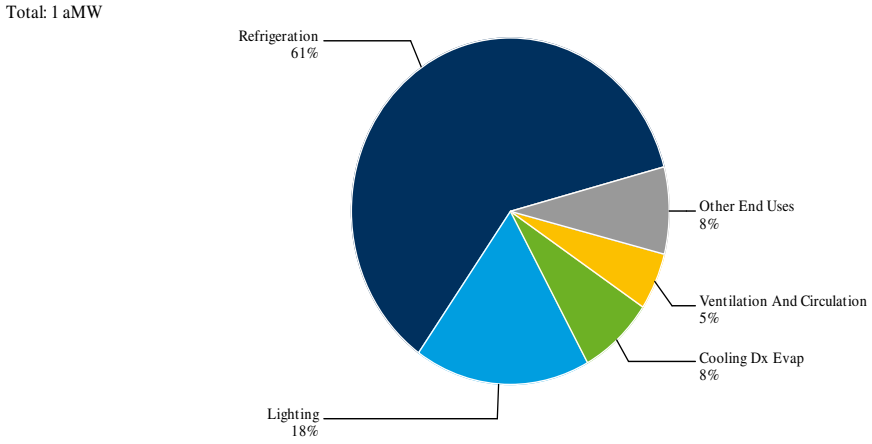
Note: 'Other End Uses' includes:
Cooling: 3%, Water Heat Le 55 Gal: 2%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.63. Achievable Technical Potential - California: Commercial Warehouse by End Use



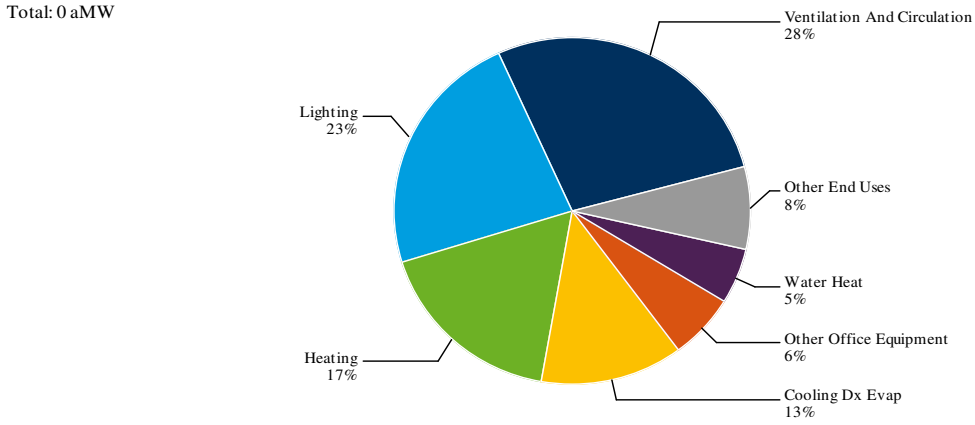
Note: 'Other End Uses' includes:
Heat Pump: 5%, Other Office Equipment: 5%, Water Heat: 3%, Cooling: 2%, Water Heat Le 55 Gal: 2%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.64. Achievable Technical Potential - Idaho: Commercial Grocery by End Use



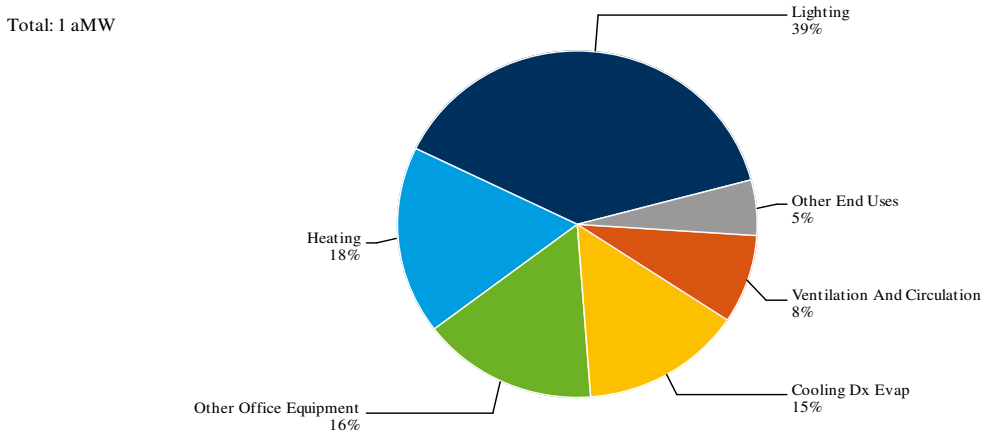
Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 2%, Heat Pump: 1%, Water Heat Le 55 Gal: <1%, Appliances: <1%, Water Heat: <1%, Cooling: <1%, Cooking: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.65. Achievable Technical Potential - Idaho: Commercial Health by End Use



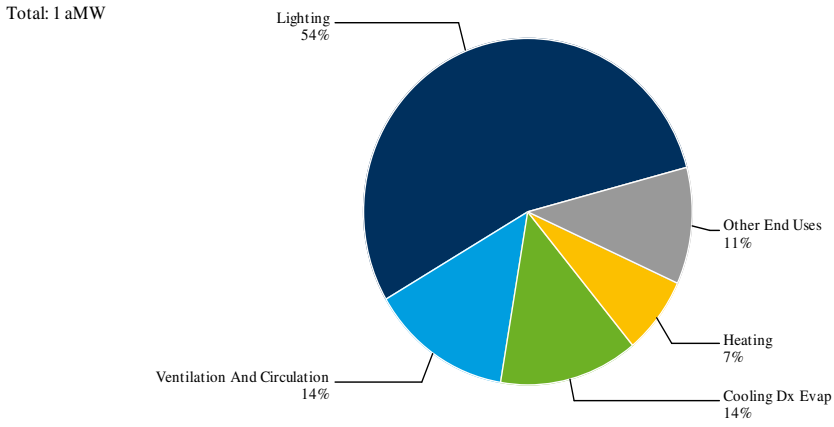
Note: 'Other End Uses' includes:
Heat Pump: 3%, Cooling: 2%, Water Heat Le 55 Gal: 1%, Appliances: <1%, Refrigeration: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%, Cooking: <1%

Figure C-4.66. Achievable Technical Potential - Idaho: Commercial Office by End Use



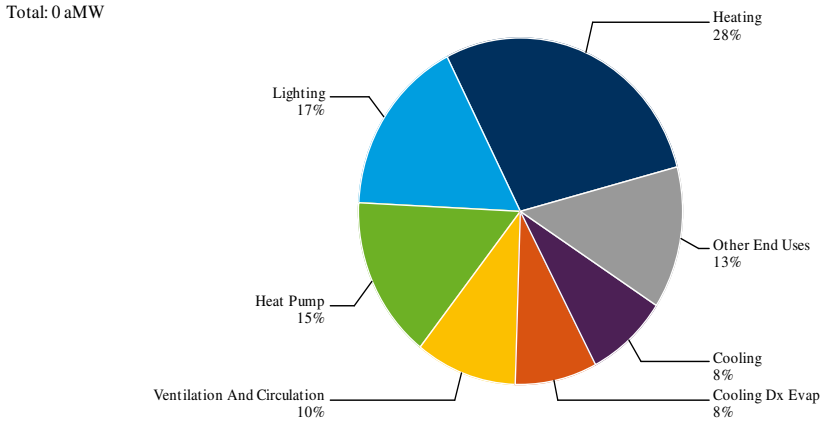
Note: 'Other End Uses' includes:
Water Heat: 2%, Cooling: <1%, Heat Pump: <1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.67. Achievable Technical Potential - Idaho: Commercial Retail by End Use



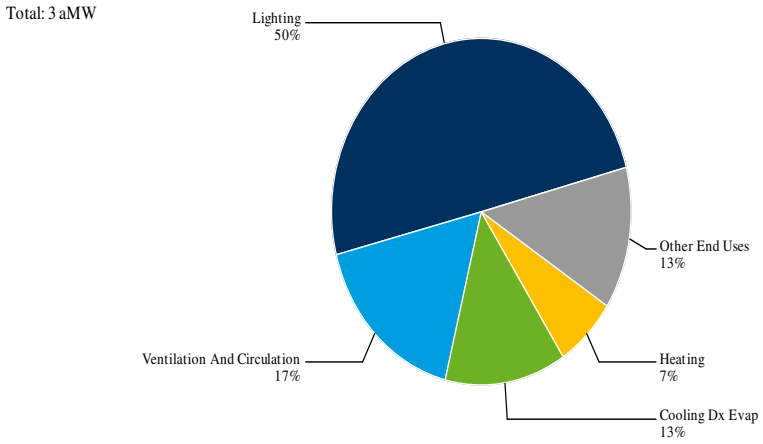
Note: 'Other End Uses' includes:
Heat Pump: 5%, Other Office Equipment: 3%, Water Heat: 1%, Cooling: <1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.68. Achievable Technical Potential - Idaho: Commercial Lodging by End Use



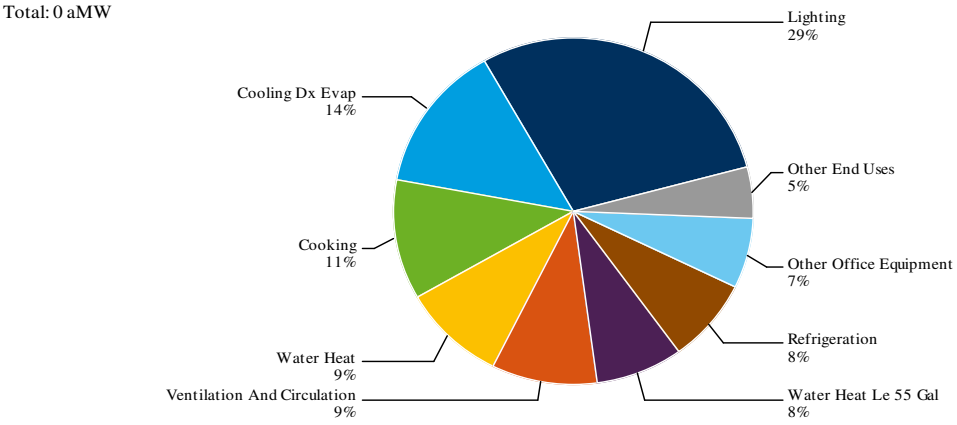
Note: 'Other End Uses' includes:
Water Heat Le 55 Gal: 4%, Other Office Equipment: 4%, Water Heat: 4%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%, Cooking: <1%, Lighting Interior Hid: <1%

Figure C-4.69. Achievable Technical Potential - Idaho: Commercial Miscellaneous by End Use



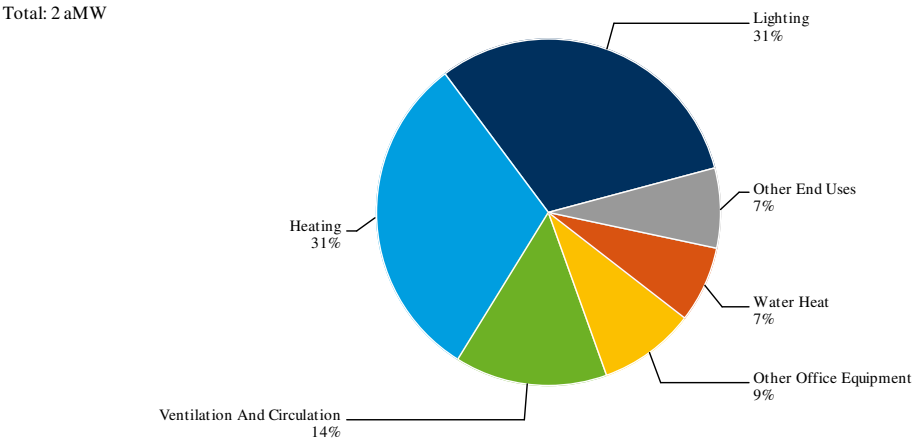
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heat Pump: 2%, Water Heat: 2%, Water Heat Le 55 Gal: 2%, Lighting Interior Hid: 1%, Cooling: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%

Figure C-4.70. Achievable Technical Potential - Idaho: Commercial Restaurant by End Use



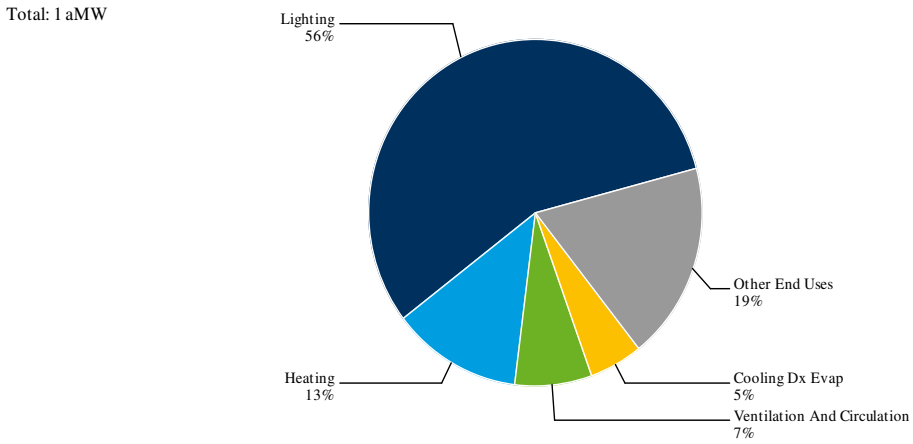
Note: 'Other End Uses' includes:
Heating: 2%, Appliances: 2%, Cooling: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.71. Achievable Technical Potential - Idaho: Commercial School by End Use



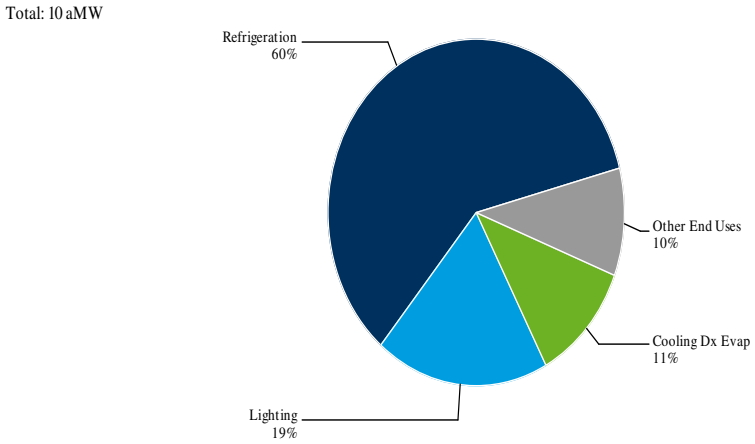
Note: 'Other End Uses' includes:
Cooling Dx Evap: 3%, Water Heat Le 55 Gal: 2%, Cooling: 1%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.72. Achievable Technical Potential - Idaho: Commercial Warehouse by End Use



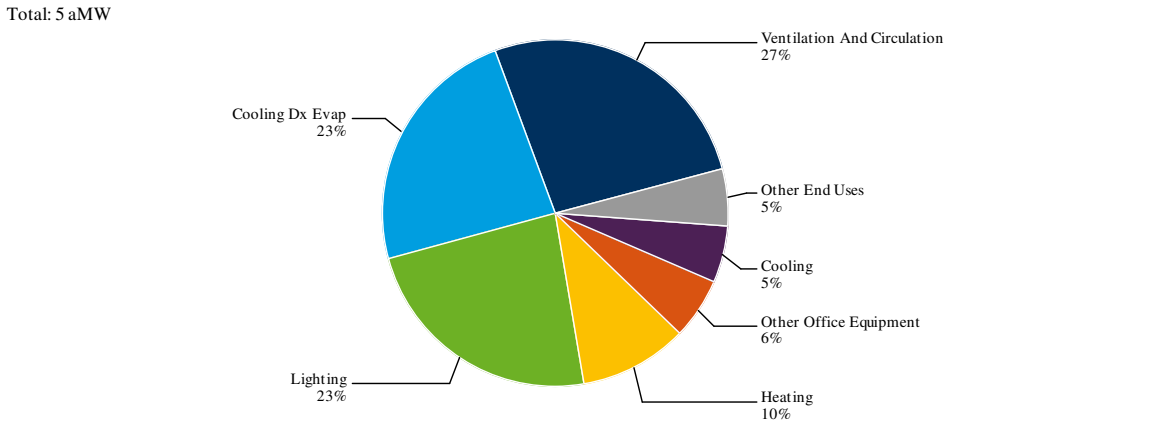
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Lighting Interior Hid: 4%, Heat Pump: 4%, Water Heat: 3%, Water Heat Le 55 Gal: 1%, Cooling: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.73. Achievable Technical Potential - Utah: Commercial Grocery by End Use



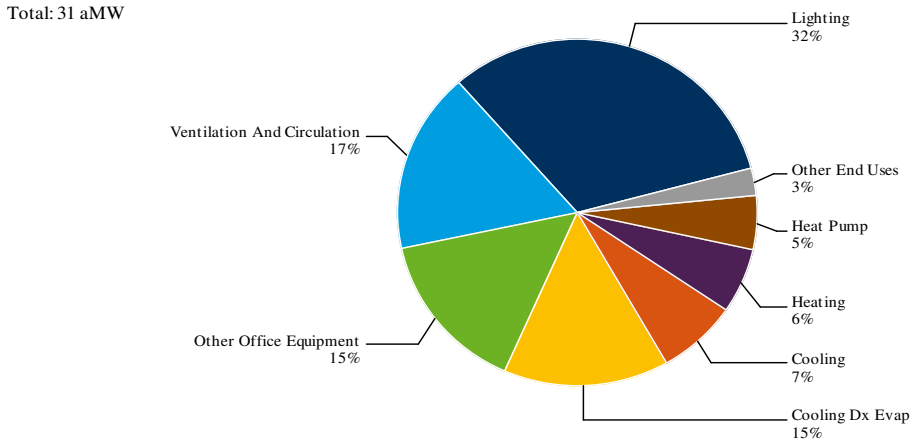
Note: 'Other End Uses' includes:
Ventilation And Circulation: 4%, Heating: 2%, Other Office Equipment: 1%, Heat Pump: 1%, Cooling: <1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Water Heat: <1%, Cooking: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.74. Achievable Technical Potential - Utah: Commercial Health by End Use



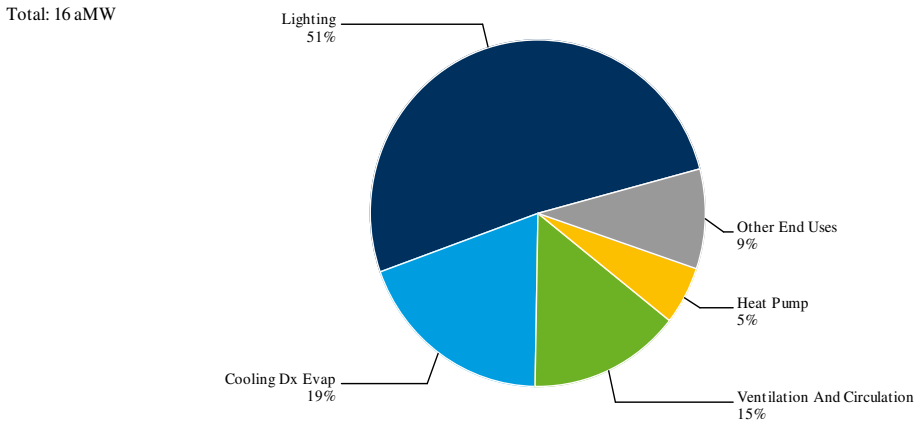
Note: 'Other End Uses' includes:
Heat Pump: 2%, Water Heat: 1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.75. Achievable Technical Potential - Utah: Commercial Office by End Use



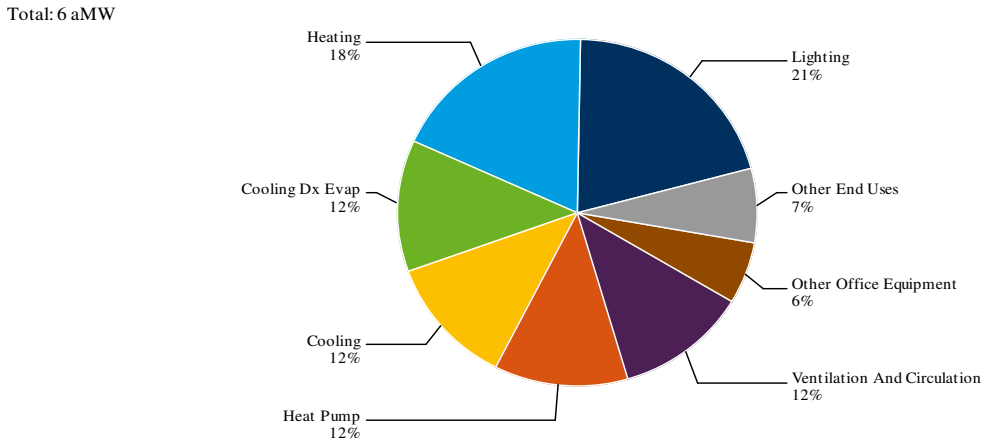
Note: 'Other End Uses' includes:
Water Heat: 1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.76. Achievable Technical Potential - Utah: Commercial Retail by End Use



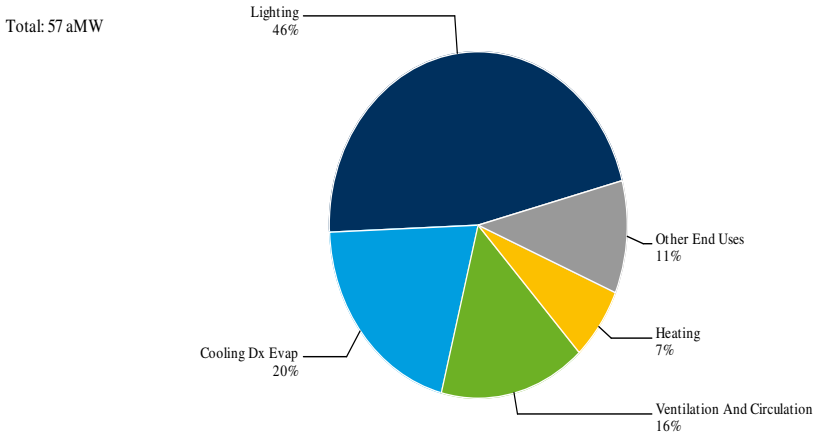
Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 3%, Water Heat: 1%, Cooling: <1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.77. Achievable Technical Potential - Utah: Commercial Lodging by End Use



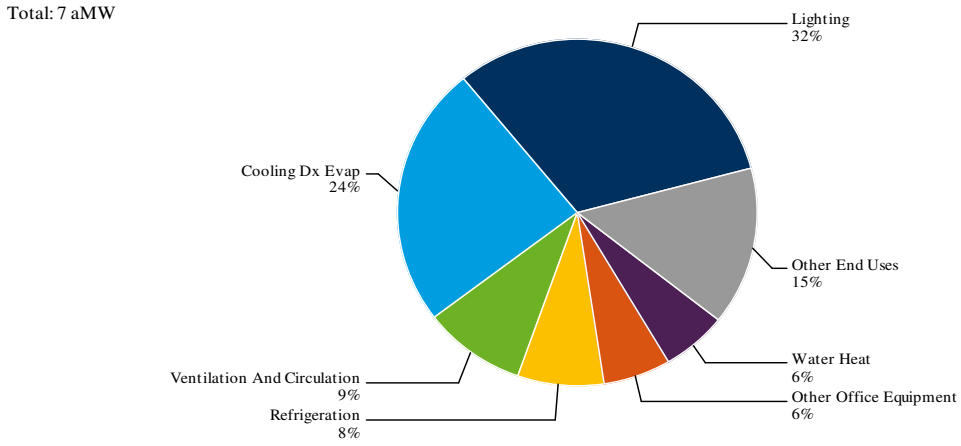
Note: 'Other End Uses' includes:
Water Heat Le 55 Gal: 3%, Water Heat: 2%, Appliances: 1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%, Cooking: <1%, Lighting Interior Hid: <1%

Figure C-4.78. Achievable Technical Potential - Utah: Commercial Miscellaneous by End Use



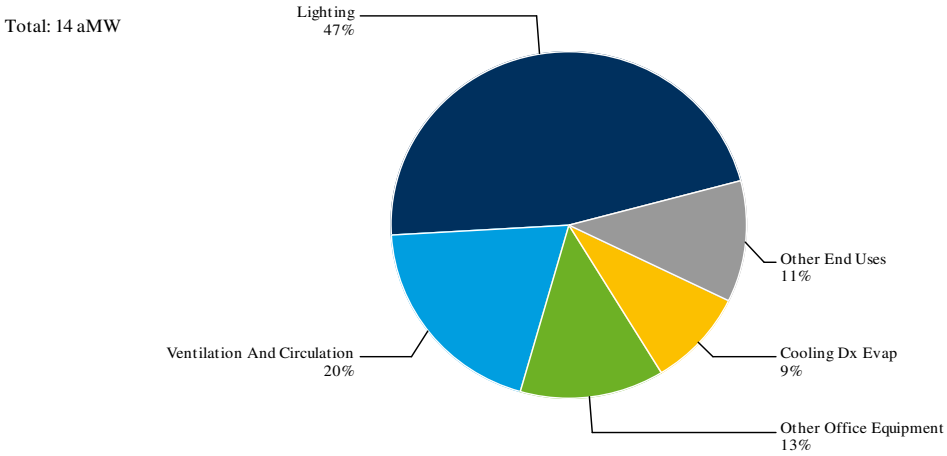
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heat Pump: 2%, Lighting Interior Hid: 1%, Cooling: 1%, Water Heat: <1%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%

Figure C-4.79. Achievable Technical Potential - Utah: Commercial Restaurant by End Use



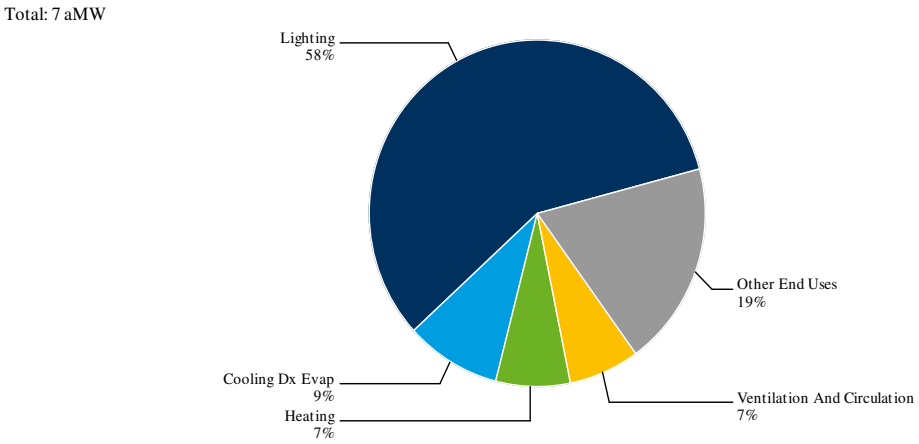
Note: 'Other End Uses' includes:
Heating: 5%, Water Heat Le 55 Gal: 5%, Cooking: 3%, Appliances: 2%, Cooling: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.80. Achievable Technical Potential - Utah: Commercial School by End Use



Note: 'Other End Uses' includes:
Water Heat: 5%, Cooling: 4%, Water Heat Le 55 Gal: 1%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

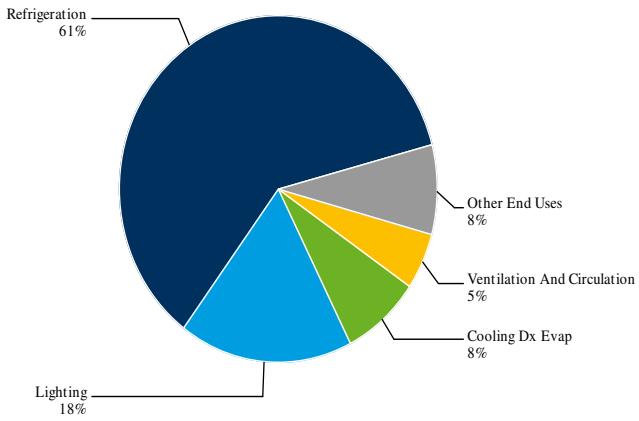
Figure C-4.81. Achievable Technical Potential - Utah: Commercial Warehouse by End Use



Note: 'Other End Uses' includes:
Lighting Interior Hid: 5%, Other Office Equipment: 4%, Heat Pump: 3%, Water Heat: 3%, Cooling: 1%, Water Heat Le 55 Gal: 1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.82. Achievable Technical Potential - Washington: Commercial Grocery by End Use

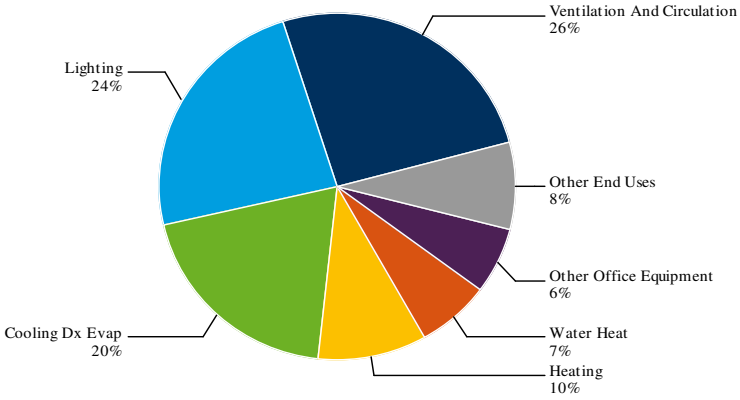
Total: 3 aMW



Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 3%, Heat Pump: 1%, Water Heat Le 55 Gal: <1%, Water Heat: <1%, Cooking: <1%, Cooling: <1%, Appliances: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

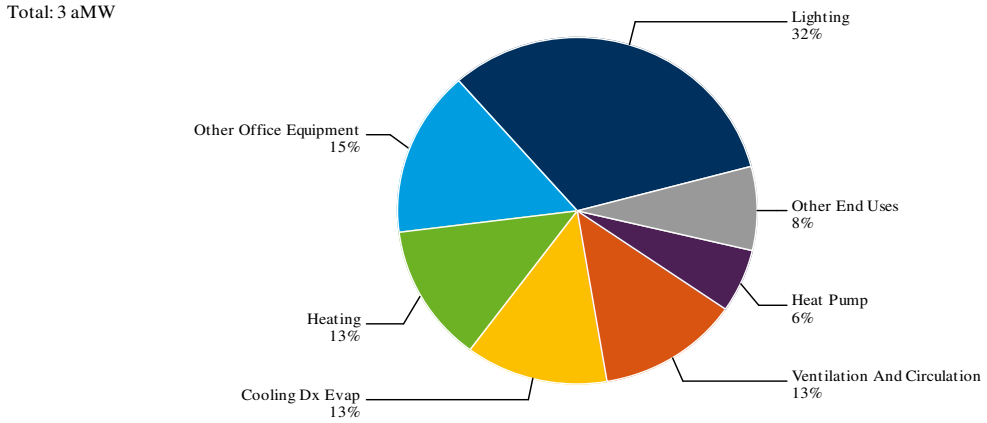
Figure C-4.83. Achievable Technical Potential - Washington: Commercial Health by End Use

Total: 1 aMW



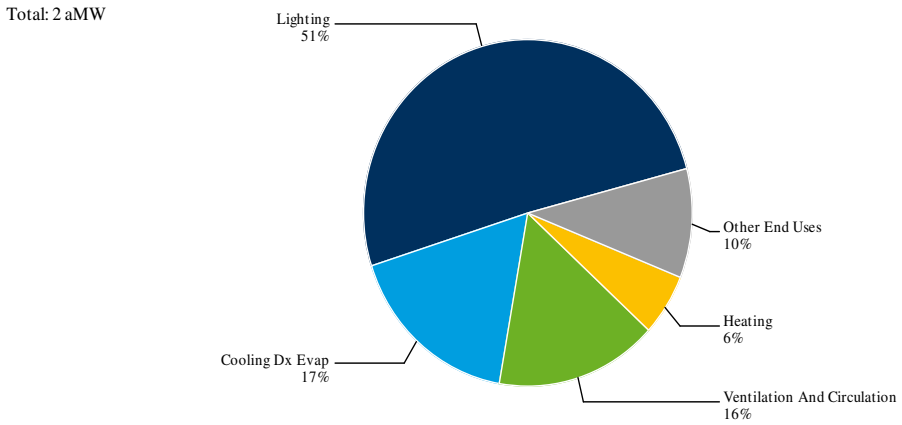
Note: 'Other End Uses' includes:
Heat Pump: 3%, Cooling: 2%, Water Heat Le 55 Gal: 2%, Appliances: <1%, Refrigeration: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%, Cooking: <1%

Figure C-4.84. Achievable Technical Potential - Washington: Commercial Office by End Use



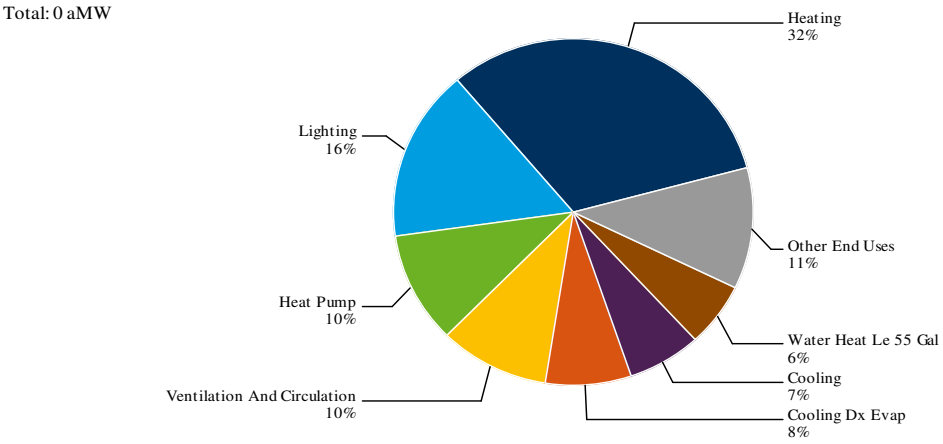
Note: 'Other End Uses' includes:
Cooling: 4%, Water Heat: 3%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.85. Achievable Technical Potential - Washington: Commercial Retail by End Use



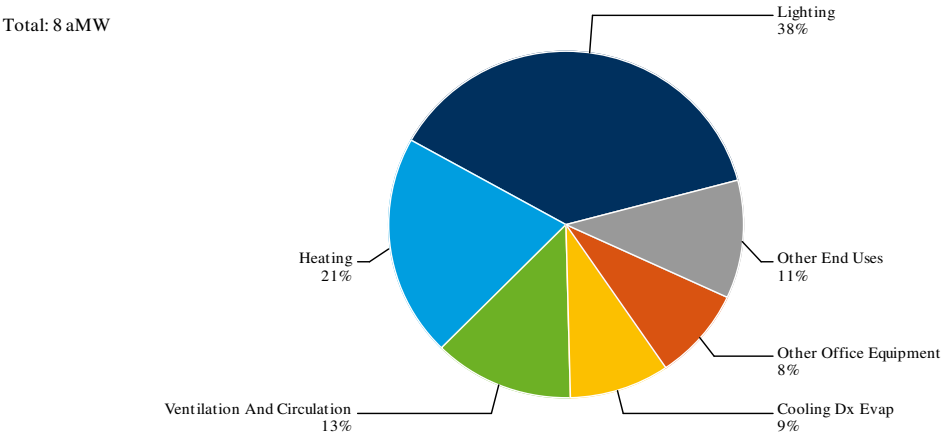
Note: 'Other End Uses' includes:
Heat Pump: 4%, Water Heat: 2%, Other Office Equipment: 2%, Cooling: <1%, Lighting Interior Hid: <1%, Water Heat Le 55 Gal: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.86. Achievable Technical Potential - Washington: Commercial Lodging by End Use



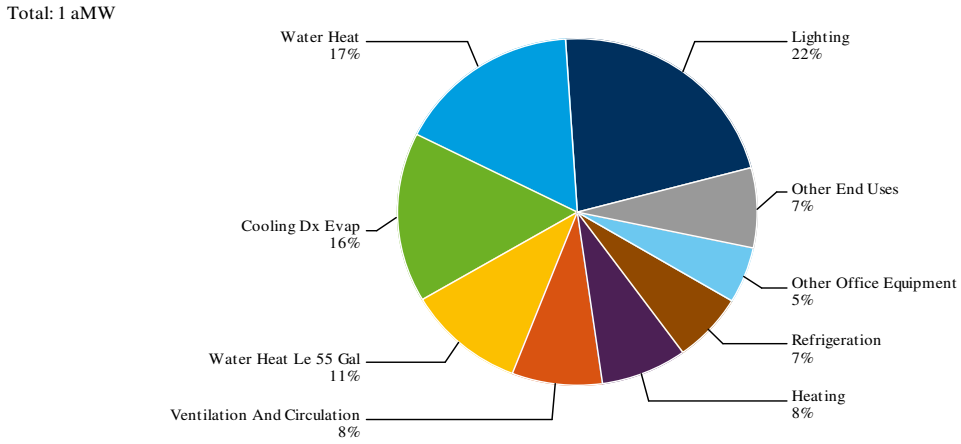
Note: 'Other End Uses' includes:
Water Heat: 5%, Other Office Equipment: 5%, Appliances: 1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Cooking: <1%

Figure C-4.87. Achievable Technical Potential - Washington: Commercial Miscellaneous by End Use



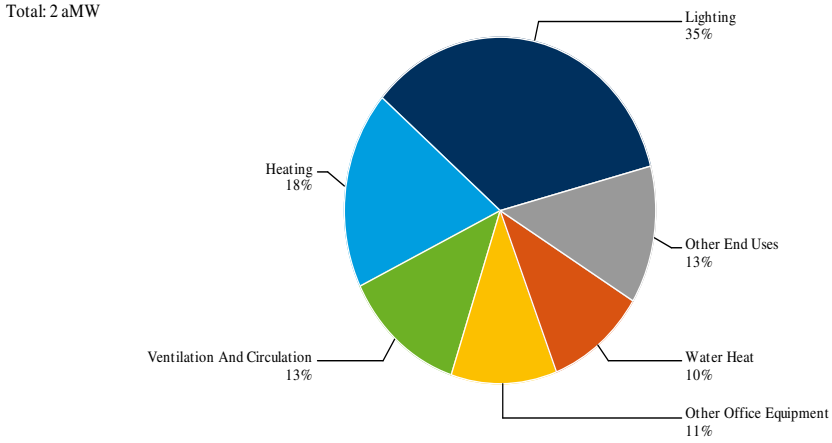
Note: 'Other End Uses' includes:
Water Heat: 3%, Heat Pump: 3%, Water Heat Le 55 Gal: 2%, Lighting Interior Hid: 2%, Cooling: 1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%

Figure C-4.88. Achievable Technical Potential - Washington: Commercial Restaurant by End Use



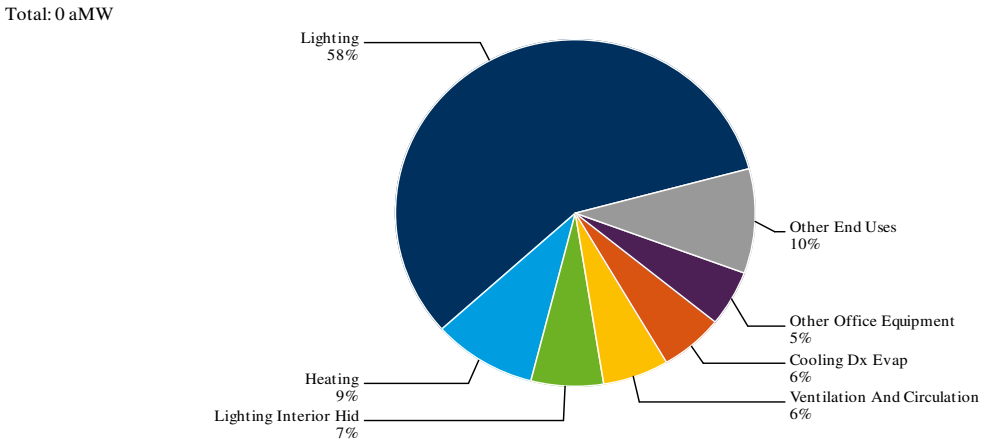
Note: 'Other End Uses' includes:
Cooking: 5%, Water Heat Gt 55 Gal: 1%, Heat Pump: <1%, Cooling: <1%, Appliances: <1%, Lighting Interior Hid: <1%

Figure C-4.89. Achievable Technical Potential - Washington: Commercial School by End Use



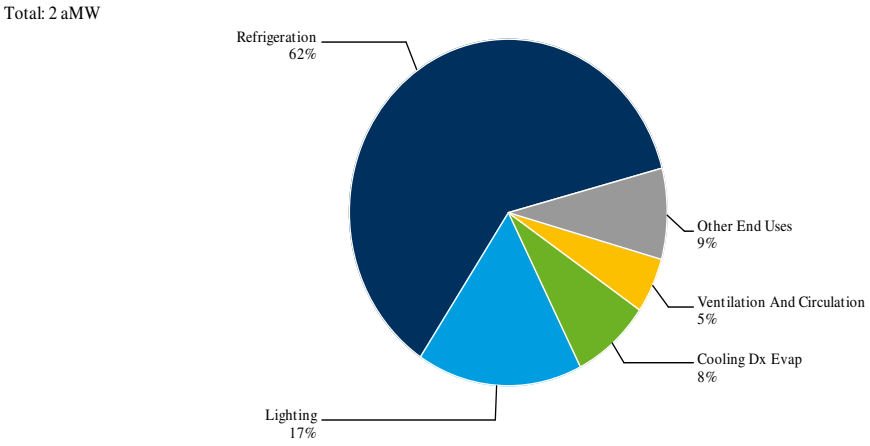
Note: 'Other End Uses' includes:
Heat Pump: 5%, Cooling Dx Evap: 4%, Water Heat Le 55 Gal: 2%, Cooling: <1%, Refrigeration: <1%, Appliances: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.90. Achievable Technical Potential - Washington: Commercial Warehouse by End Use



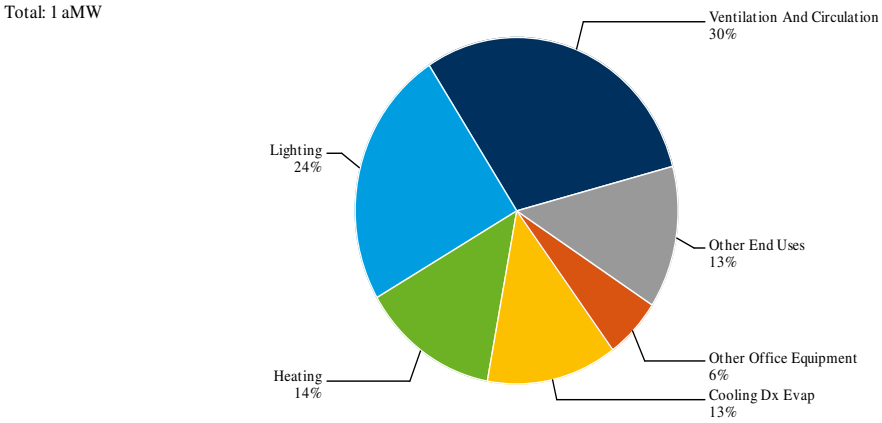
Note: 'Other End Uses' includes:
Water Heat: 4%, Heat Pump: 2%, Water Heat Le 55 Gal: 2%, Cooling: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.91. Achievable Technical Potential - Wyoming: Commercial Grocery by End Use



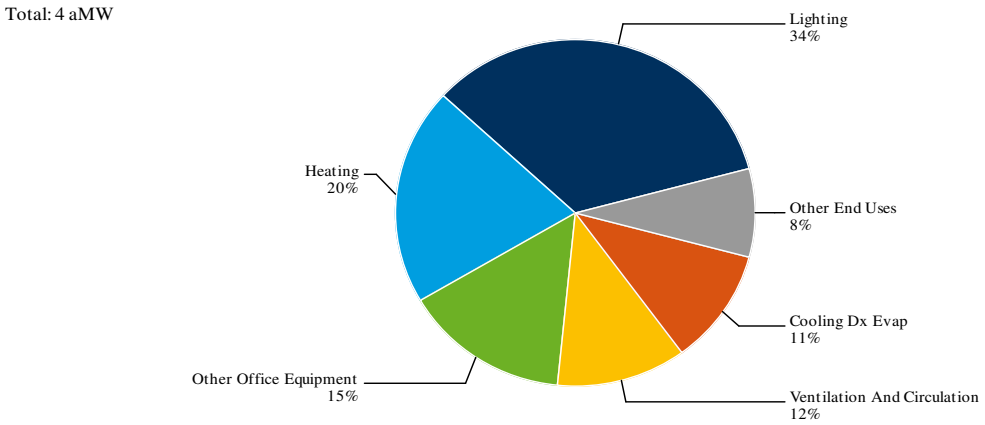
Note: 'Other End Uses' includes:
Heating: 3%, Other Office Equipment: 2%, Heat Pump: 1%, Water Heat Le 55 Gal: <1%, Water Heat: <1%, Appliances: <1%, Cooking: <1%, Cooling: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.92. Achievable Technical Potential - Wyoming: Commercial Health by End Use



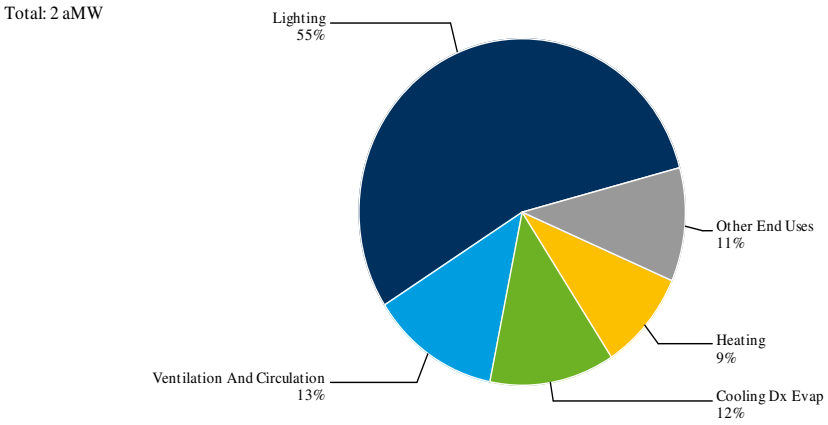
Note: 'Other End Uses' includes:
Water Heat: 5%, Heat Pump: 4%, Cooling: 2%, Water Heat Le 55 Gal: 1%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

Figure C-4.93. Achievable Technical Potential - Wyoming: Commercial Office by End Use



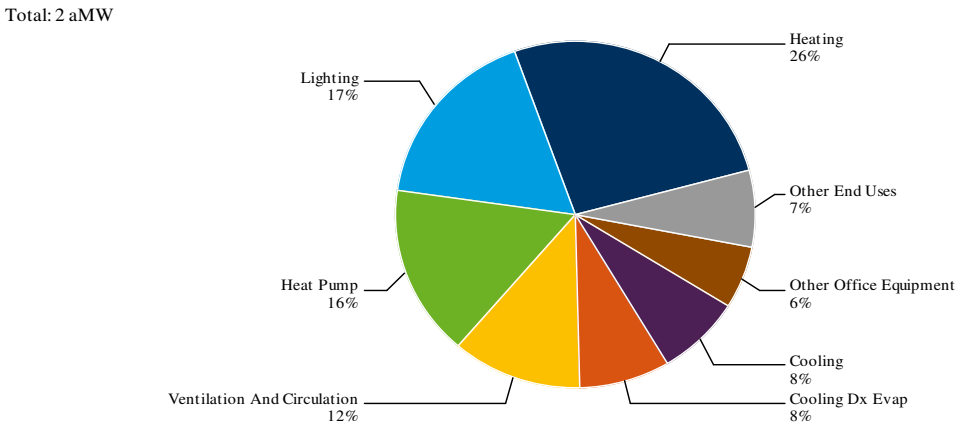
Note: 'Other End Uses' includes:
Heat Pump: 3%, Cooling: 2%, Water Heat: 2%, Appliances: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.94. Achievable Technical Potential - Wyoming: Commercial Retail by End Use



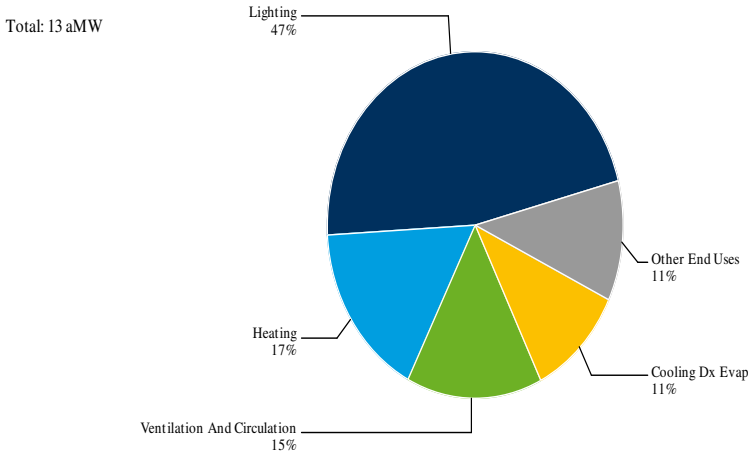
Note: 'Other End Uses' includes:
Heat Pump: 5%, Other Office Equipment: 4%, Water Heat: <1%, Appliances: <1%, Cooling: <1%, Water Heat Le 55 Gal: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.95. Achievable Technical Potential - Wyoming: Commercial Lodging by End Use



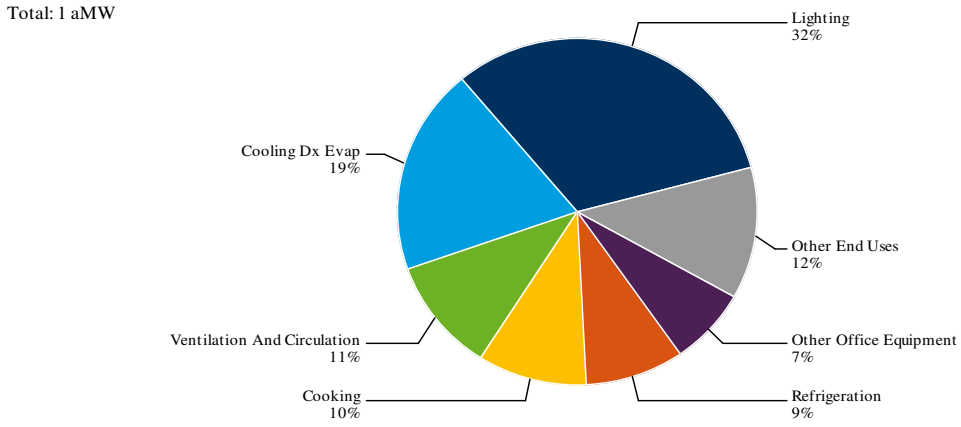
Note: 'Other End Uses' includes:
Water Heat Le 55 Gal: 4%, Water Heat: 2%, Appliances: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%

Figure C-4.96. Achievable Technical Potential - Wyoming: Commercial Miscellaneous by End Use



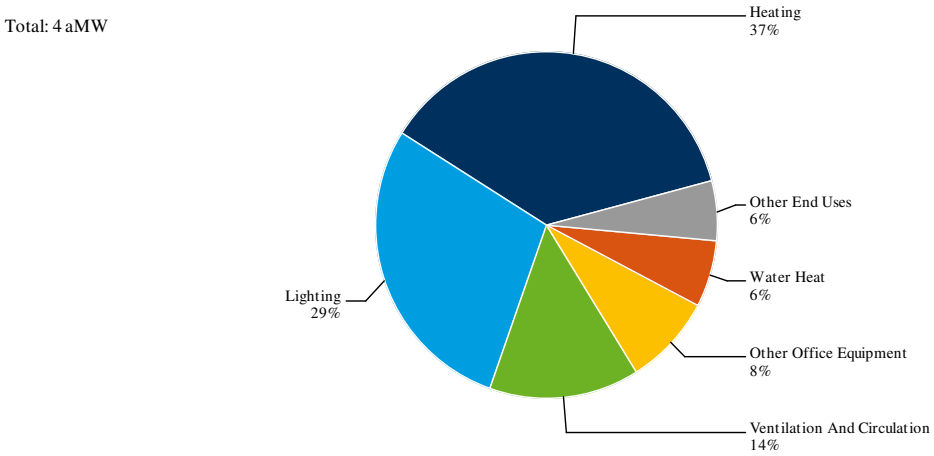
Note: 'Other End Uses' includes:
Other Office Equipment: 4%, Heat Pump: 3%, Lighting Interior Hid: 2%, Water Heat Le 55 Gal: <1%, Water Heat: <1%, Appliances: <1%, Cooling: <1%, Water Heat Gt 55 Gal: <1%, Refrigeration: <1%

Figure C-4.97. Achievable Technical Potential - Wyoming: Commercial Restaurant by End Use



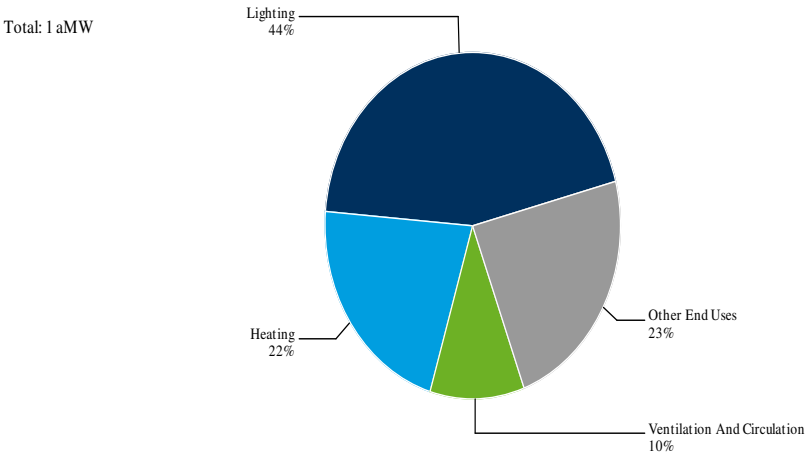
Note: 'Other End Uses' includes:
Heating: 4%, Water Heat: 3%, Water Heat Le 55 Gal: 3%, Appliances: 2%, Cooling: <1%, Water Heat Gt 55 Gal: <1%, Lighting Interior Hid: <1%

Figure C-4.98. Achievable Technical Potential - Wyoming: Commercial School by End Use



Note: 'Other End Uses' includes:
Cooling Dx Evap: 2%, Water Heat Le 55 Gal: 2%, Cooling: <1%, Appliances: <1%, Refrigeration: <1%, Lighting Interior Hid: <1%, Water Heat Gt 55 Gal: <1%, Cooking: <1%

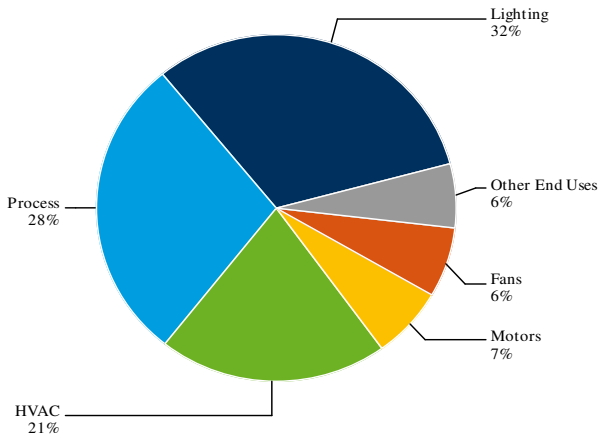
Figure C-4.99. Achievable Technical Potential - Wyoming: Commercial Warehouse by End Use



Note: 'Other End Uses' includes:
Heat Pump: 5%, Cooling Dx Evap: 5%, Lighting Interior Hid: 4%, Other Office Equipment: 4%, Water Heat: 4%, Water Heat Le 55 Gal: 1%, Cooling: <1%, Appliances: <1%, Water Heat Gt 55 Gal: <1%

Figure C-4.100. Achievable Technical Potential - California: Industrial Mach./Equip by End Use

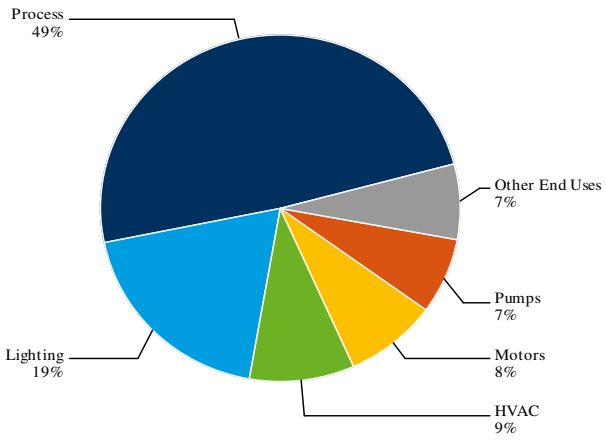
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.101. Achievable Technical Potential - California: Industrial Food by End Use

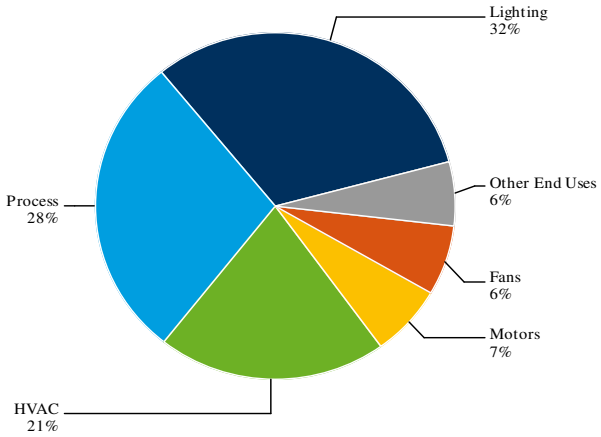
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 5%, Fans: 2%

Figure C-4.102. Achievable Technical Potential - California: Industrial Mach./Equip by End Use

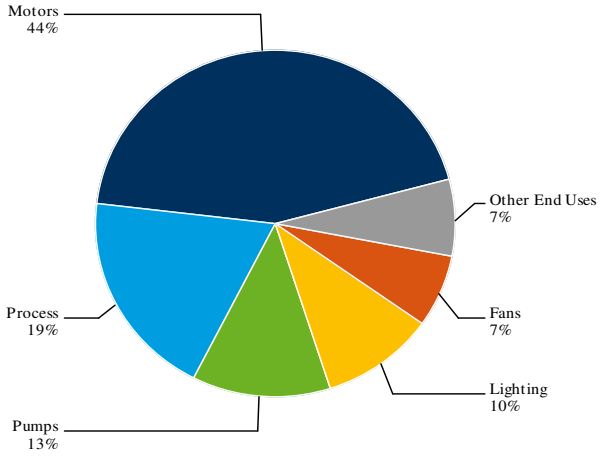
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.103. Achievable Technical Potential - California: Industrial Lumber by End Use

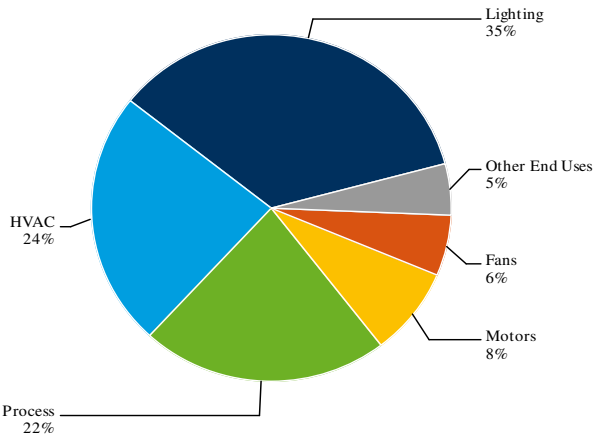
Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 5%, Other: 3%

Figure C-4.104. Achievable Technical Potential - California: Industrial Miscellaneous Mfg by End Use

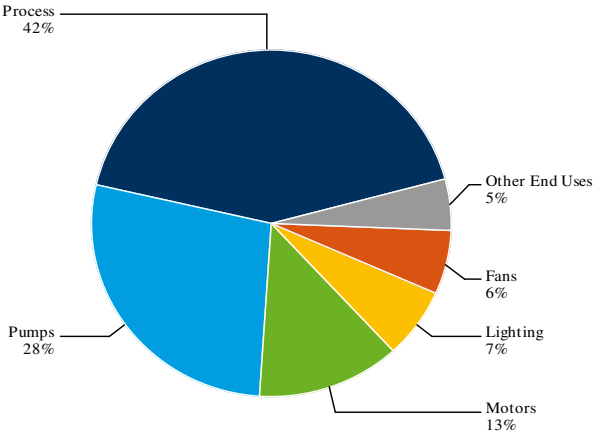
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 2%, Pumps: 2%

Figure C-4.105. Achievable Technical Potential - California: Industrial Petroleum by End Use

Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: <1%

Figure C-4.106. Achievable Technical Potential - California: Industrial Stone Clay Glass Products by End Use

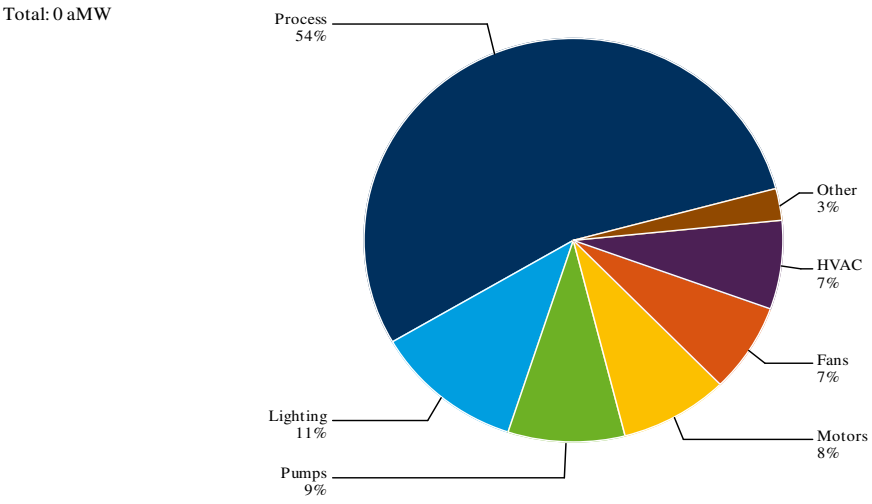
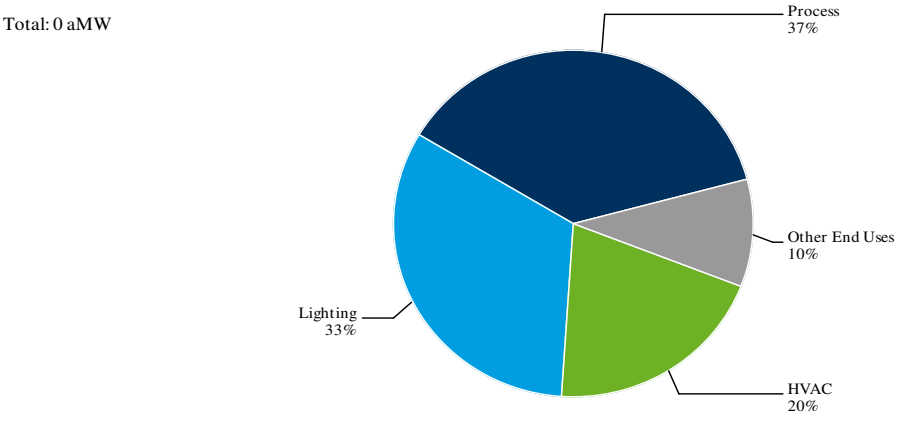


Figure C-4.107. Achievable Technical Potential - California: Industrial Transportation by End Use



Note: 'Other End Uses' includes:
Motors: 4%, Fans: 2%, Other: 2%, Pumps: 2%

Figure C-4.108. Achievable Technical Potential - California: Industrial Water/Wastewater by End Use

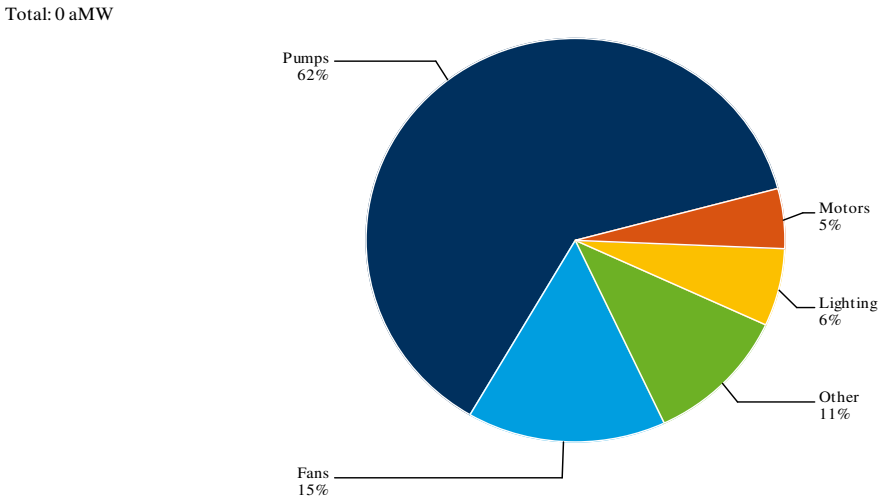
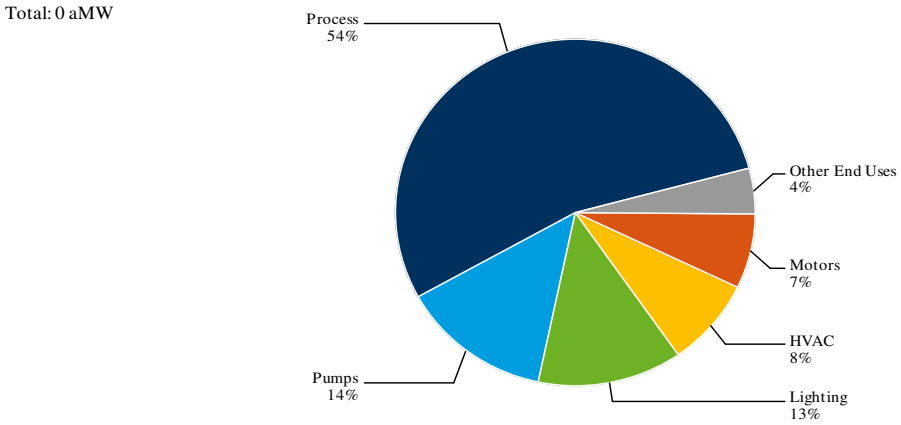


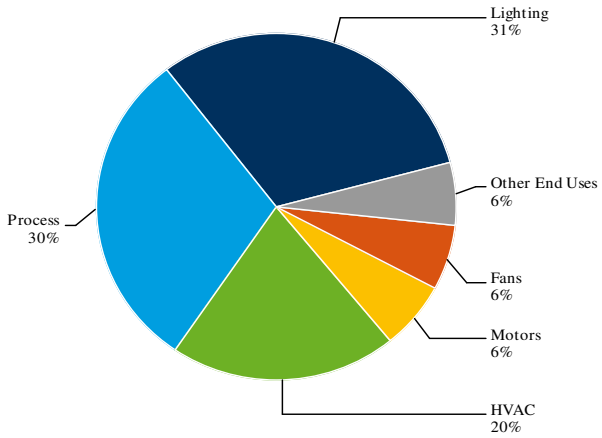
Figure C-4.109. Achievable Technical Potential - Idaho: Industrial Chemicals by End Use



Note: 'Other End Uses' includes:
Fans: 3%, Other: 1%

Figure C-4.110. Achievable Technical Potential - Idaho: Industrial Mach./Equip by End Use

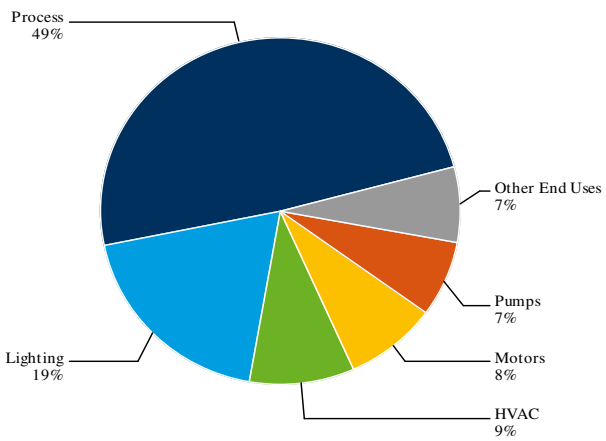
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.111. Achievable Technical Potential - Idaho: Industrial Food by End Use

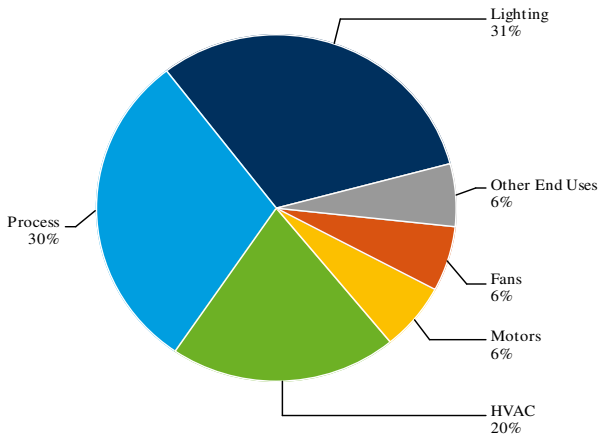
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 5%, Fans: 2%

Figure C-4.112. Achievable Technical Potential - Idaho: Industrial Mach./Equip by End Use

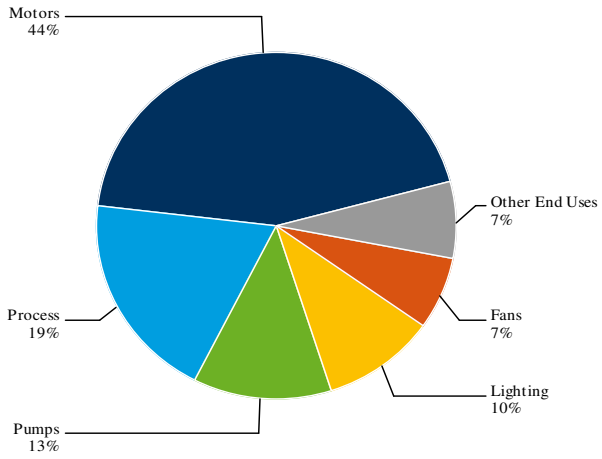
Total: 0 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.113. Achievable Technical Potential - Idaho: Industrial Lumber by End Use

Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 5%, Other: 3%

Figure C-4.114. Achievable Technical Potential - Idaho: Industrial Miscellaneous Mfg by End Use

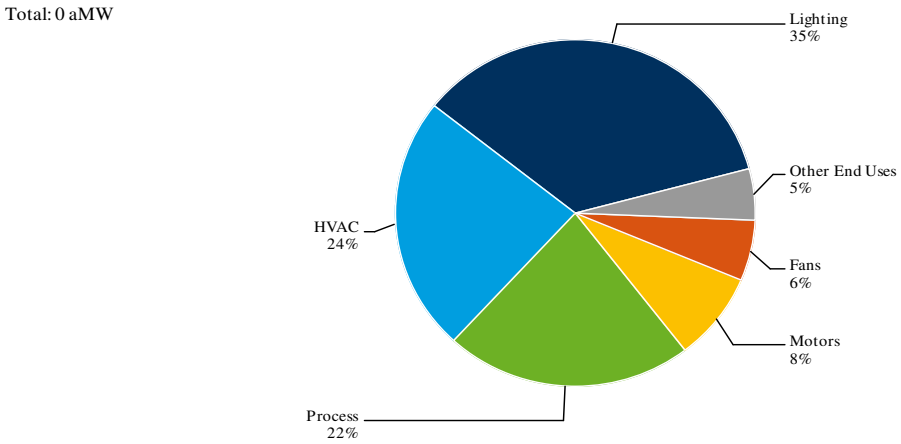


Figure C-4.115. Achievable Technical Potential - Idaho: Industrial Petroleum by End Use

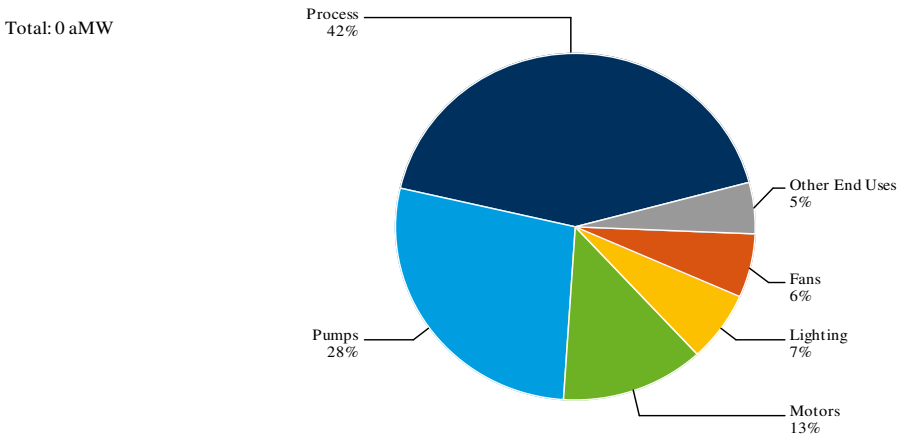


Figure C-4.116. Achievable Technical Potential - Idaho: Industrial Stone Clay Glass Products by End Use

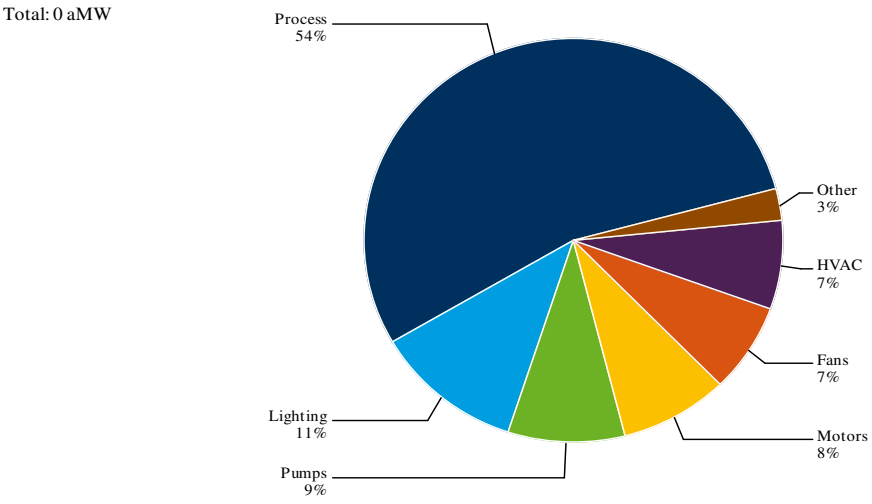
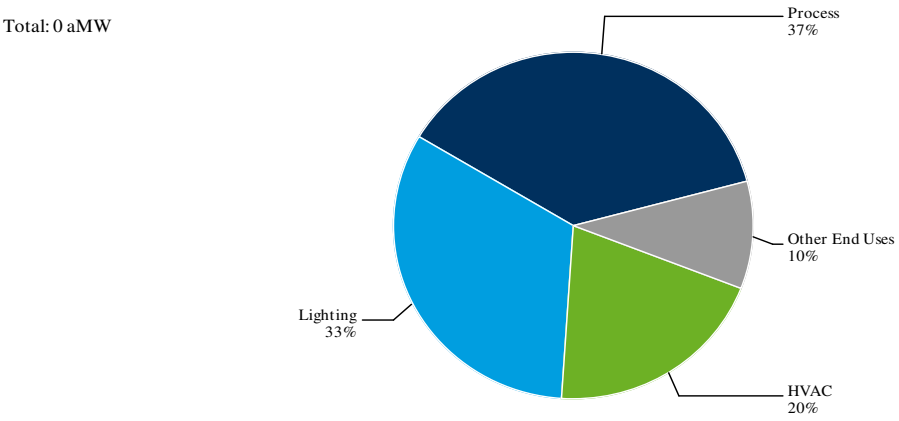


Figure C-4.117. Achievable Technical Potential - Idaho: Industrial Transportation by End Use



Note: 'Other End Uses' includes:
Motors: 4%, Fans: 2%, Other: 2%, Pumps: 2%

Figure C-4.118. Achievable Technical Potential - Idaho: Industrial Water/Wastewater by End Use

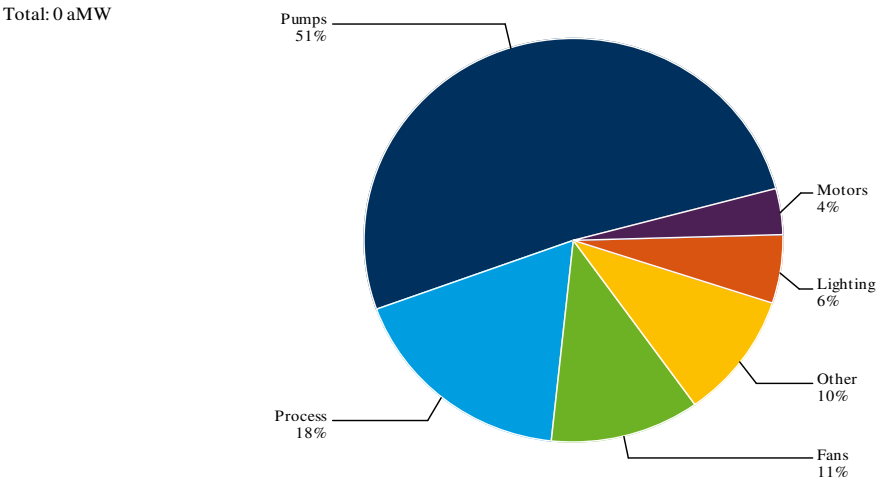
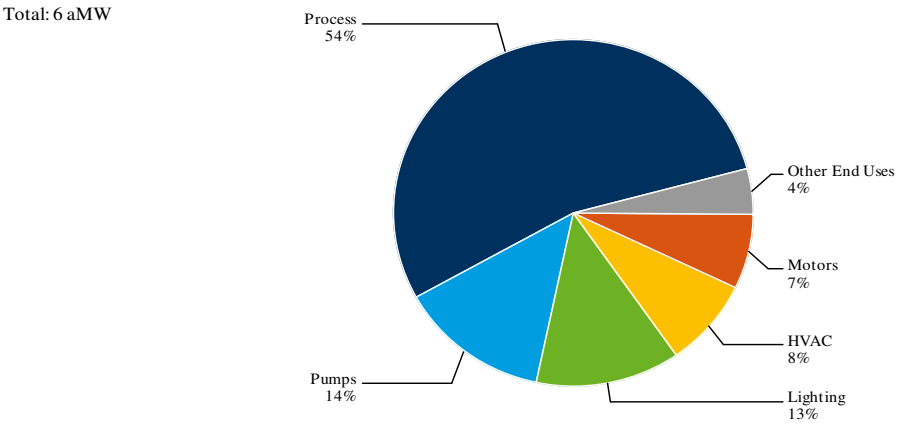


Figure C-4.119. Achievable Technical Potential - Utah: Industrial Chemicals by End Use



Note: 'Other End Uses' includes:
Fans: 3%, Other: 1%

Figure C-4.120. Achievable Technical Potential - Utah: Industrial Mach./Equip by End Use

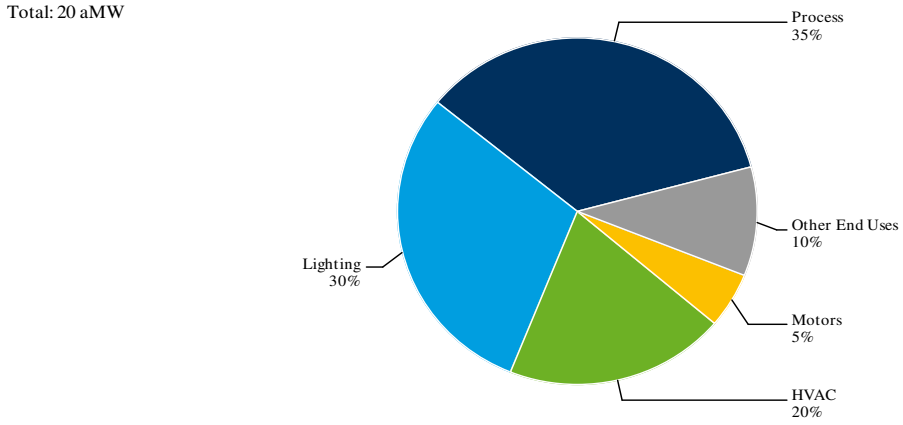


Figure C-4.121. Achievable Technical Potential - Utah: Industrial Food by End Use

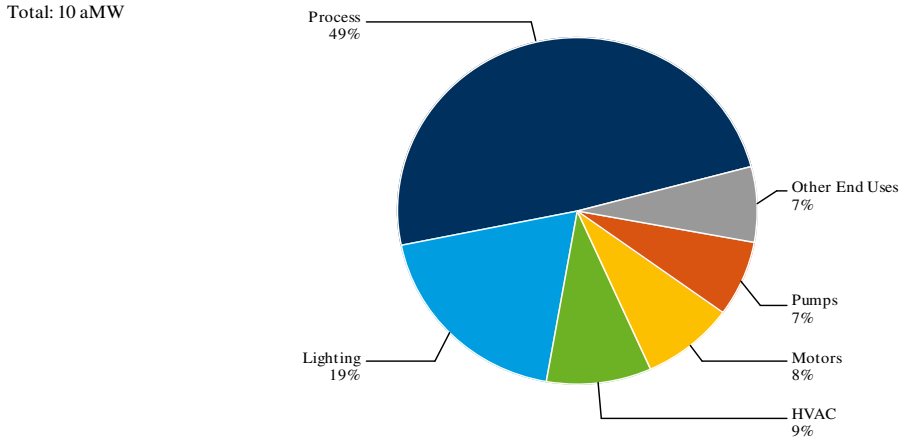
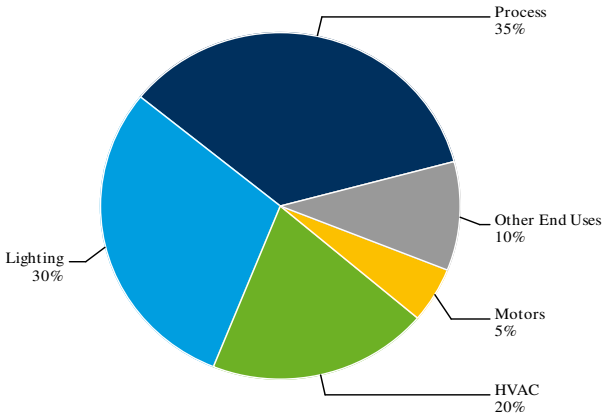


Figure C-4.122. Achievable Technical Potential - Utah: Industrial Mach./Equip by End Use

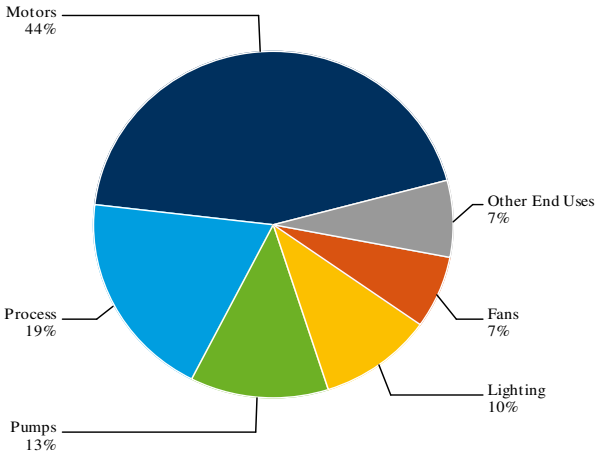
Total: 20 aMW



Note: 'Other End Uses' includes:
Fans: 5%, Other: 4%, Pumps: 2%

Figure C-4.123. Achievable Technical Potential - Utah: Industrial Lumber by End Use

Total: 8 aMW



Note: 'Other End Uses' includes:
HVAC: 5%, Other: 3%

Figure C-4.124. Achievable Technical Potential - Utah: Industrial Mining by End Use

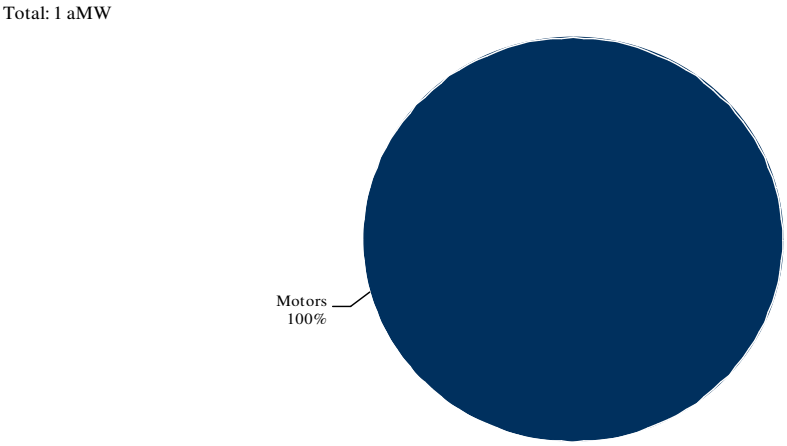
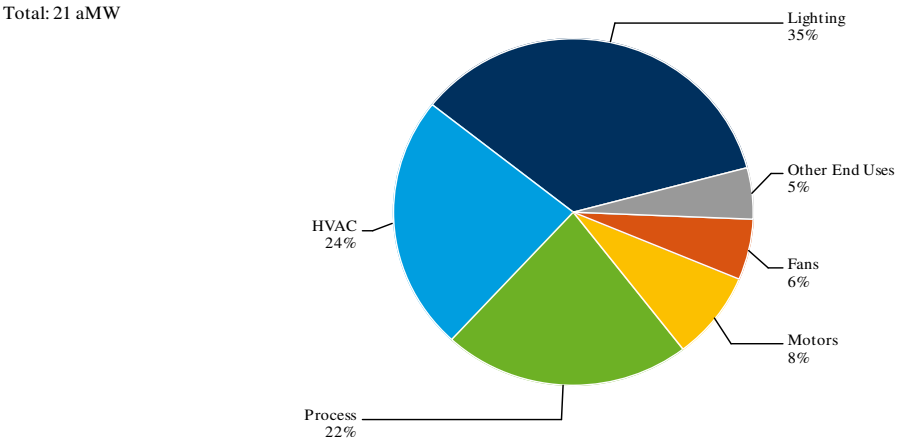


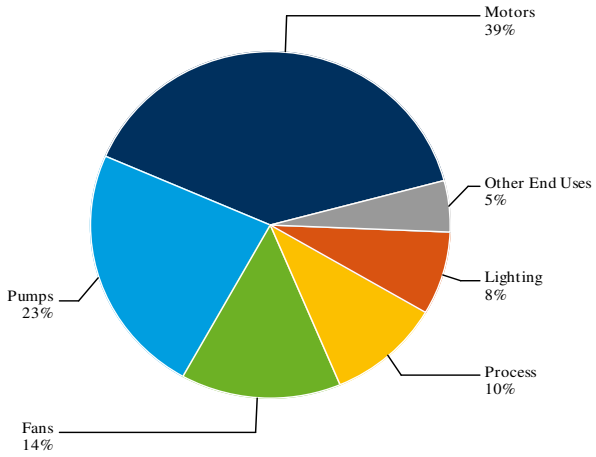
Figure C-4.125. Achievable Technical Potential - Utah: Industrial Miscellaneous Mfg by End Use



Note: 'Other End Uses' includes:
Other: 2%, Pumps: 2%

Figure C-4.126. Achievable Technical Potential - Utah: Industrial Paper by End Use

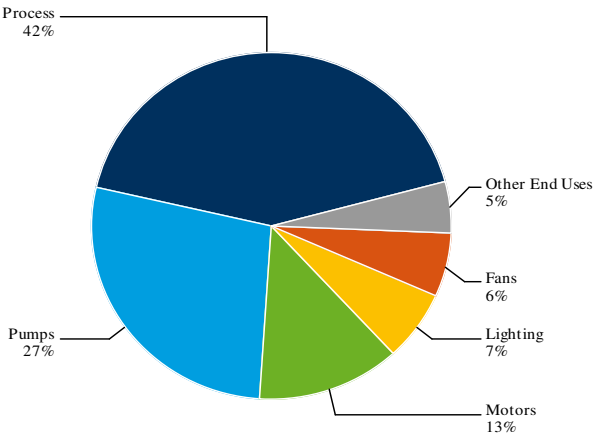
Total: 3 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: 1%

Figure C-4.127. Achievable Technical Potential - Utah: Industrial Petroleum by End Use

Total: 1 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: <1%

Figure C-4.128. Achievable Technical Potential - Utah: Industrial Stone Clay Glass Products by End Use

Total: 8 aMW

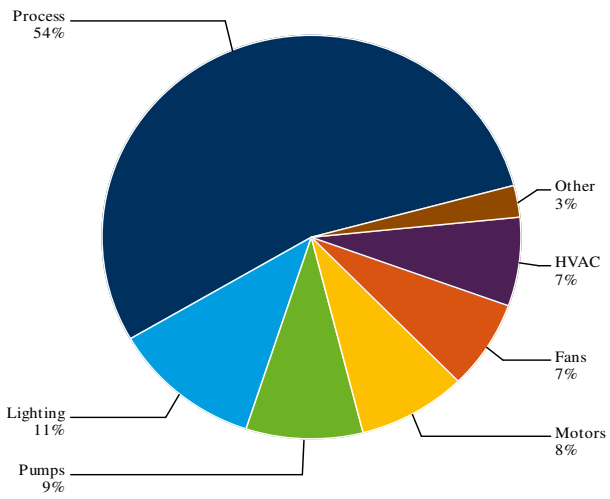
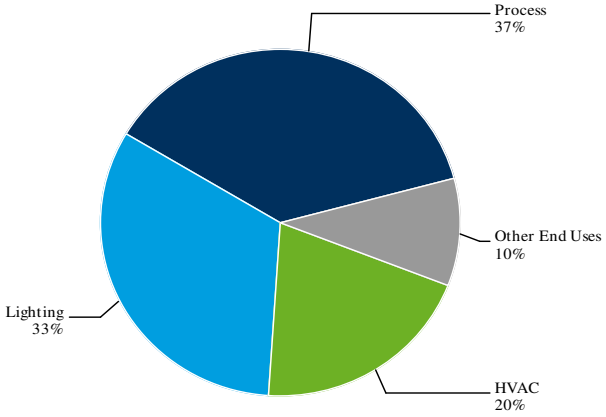


Figure C-4.129. Achievable Technical Potential - Utah: Industrial Transportation by End Use

Total: 7 aMW



Note: 'Other End Uses' includes:
Motors: 4%, Fans: 2%, Other: 2%, Pumps: 2%

Figure C-4.130. Achievable Technical Potential - Utah: Industrial Water/Wastewater by End Use

Total: 4 aMW

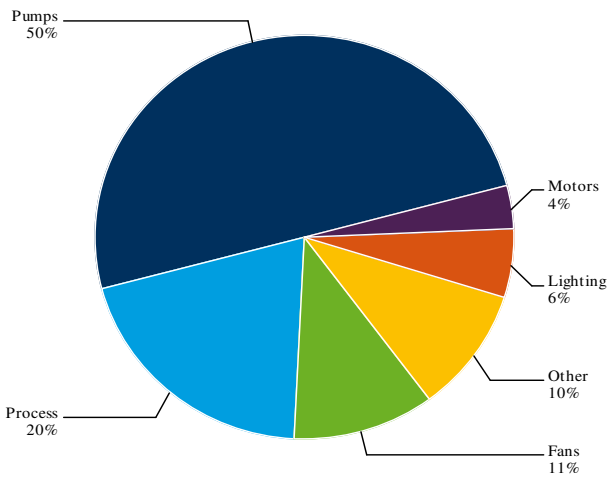
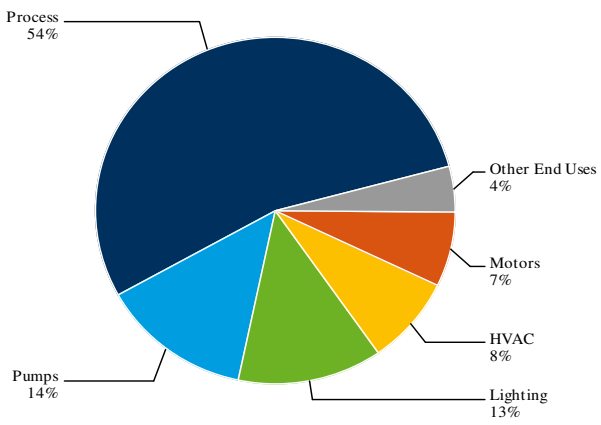


Figure C-4.131. Achievable Technical Potential - Washington:\ Industrial Chemicals by End Use

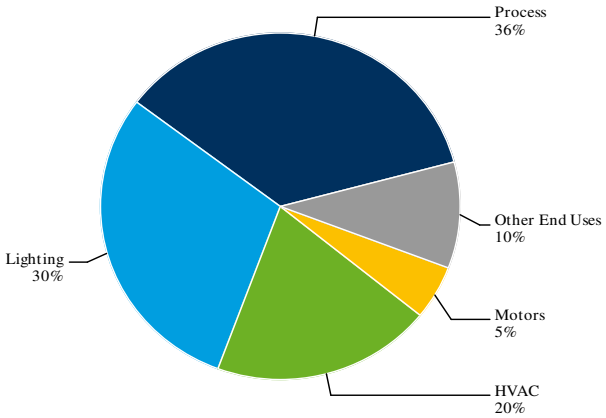
Total: 0 aMW



Note: 'Other End Uses' includes:
Fans: 3%, Other: 1%

Figure C-4.132. Achievable Technical Potential - Washington: Industrial Mach./Equip by End Use

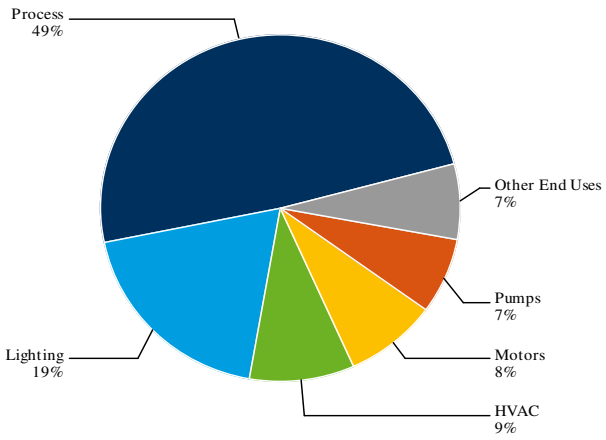
Total: 3 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Other: 4%, Pumps: 2%

Figure C-4.133. Achievable Technical Potential - Washington: Industrial Food by End Use

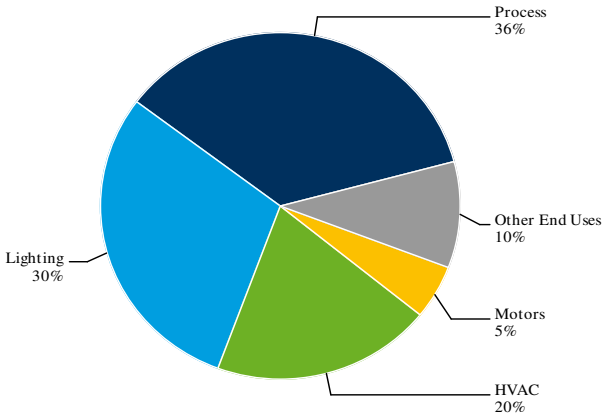
Total: 2 aMW



Note: 'Other End Uses' includes:
Other: 5%, Fans: 2%

Figure C-4.134. Achievable Technical Potential - Washington: Industrial Mach./Equip by End Use

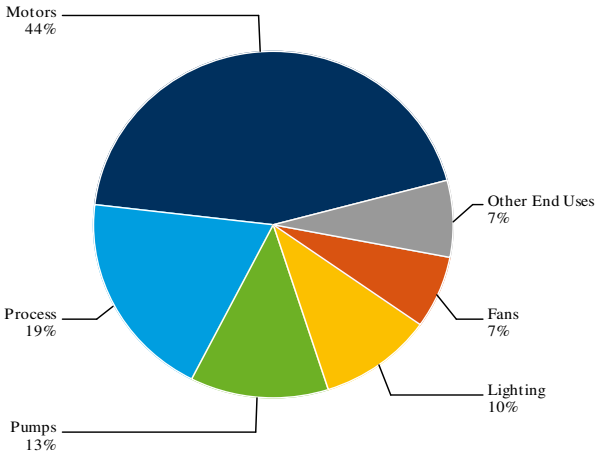
Total: 3 aMW



Note: 'Other End Uses' includes:
Fans: 4%, Other: 4%, Pumps: 2%

Figure C-4.135. Achievable Technical Potential - Washington: Industrial Lumber by End Use

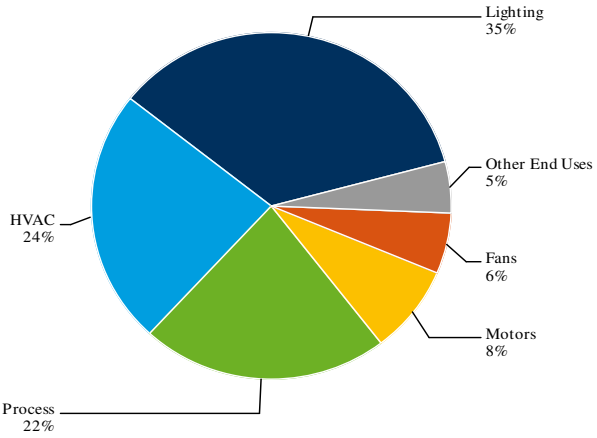
Total: 1 aMW



Note: 'Other End Uses' includes:
HVAC: 5%, Other: 3%

Figure C-4.136. Achievable Technical Potential - Washington: Industrial Miscellaneous Mfg by End Use

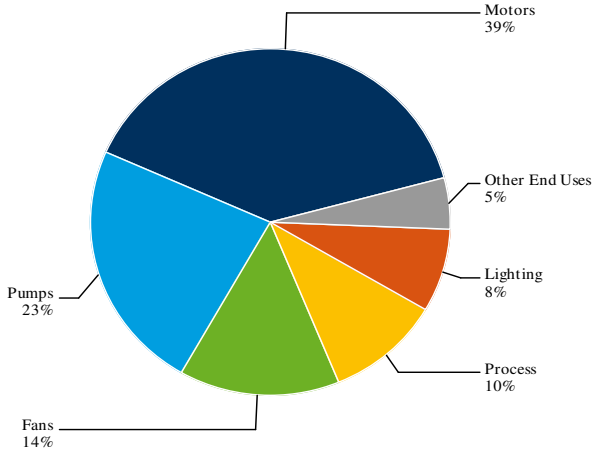
Total: 2 aMW



Note: 'Other End Uses' includes:
Other: 2%, Pumps: 2%

Figure C-4.137. Achievable Technical Potential - Washington: Industrial Paper by End Use

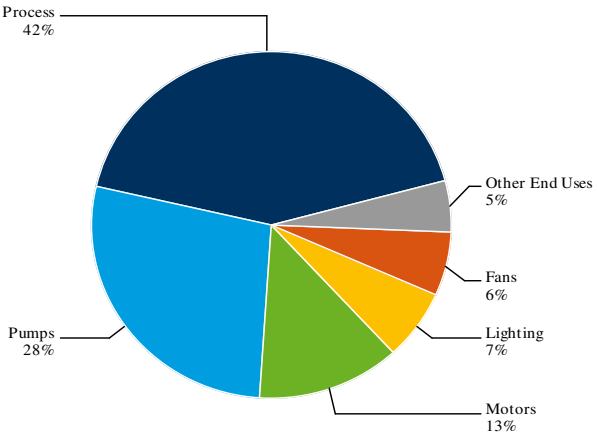
Total: 1 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: <1%

Figure C-4.138. Achievable Technical Potential - Washington: Industrial Petroleum by End Use

Total: 0 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: <1%

Figure C-4.139. Achievable Technical Potential - Washington: Industrial Stone Clay Glass Products by End Use

Total: 0 aMW

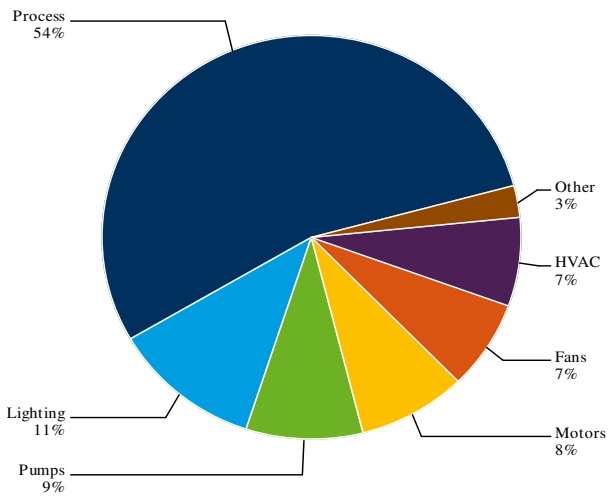


Figure C-4.140. Achievable Technical Potential - Washington: Industrial Transportation by End Use

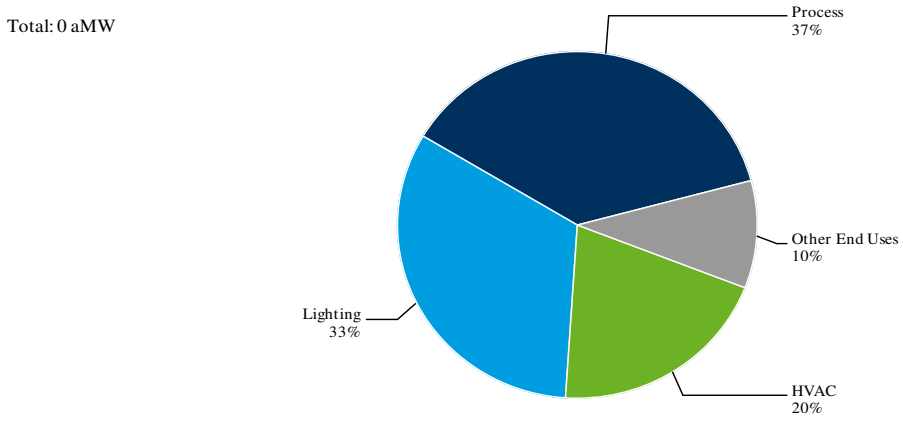


Figure C-4.141. Achievable Technical Potential - Washington: Industrial Water/Wastewater by End Use

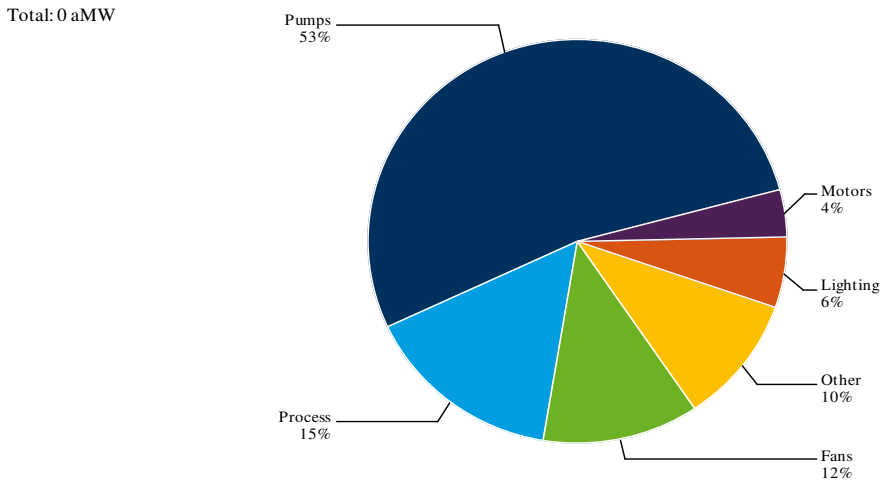
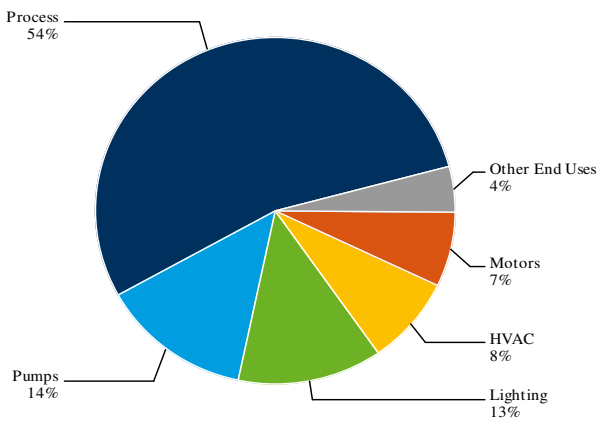


Figure C-4.142. Achievable Technical Potential - Wyoming: Industrial Chemicals by End Use

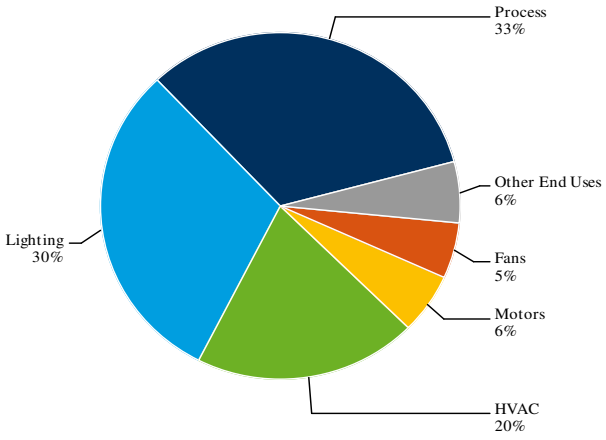
Total: 11 aMW



Note: 'Other End Uses' includes:
Fans: 3%, Other: 1%

Figure C-4.143. Achievable Technical Potential - Wyoming: Industrial Mach./Equip by End Use

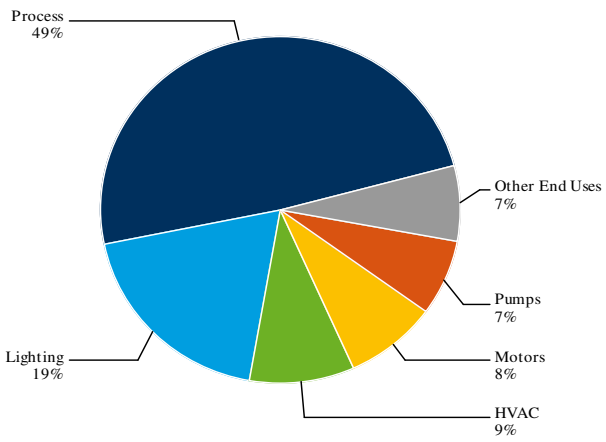
Total: 19 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.144. Achievable Technical Potential - Wyoming: Industrial Food by End Use

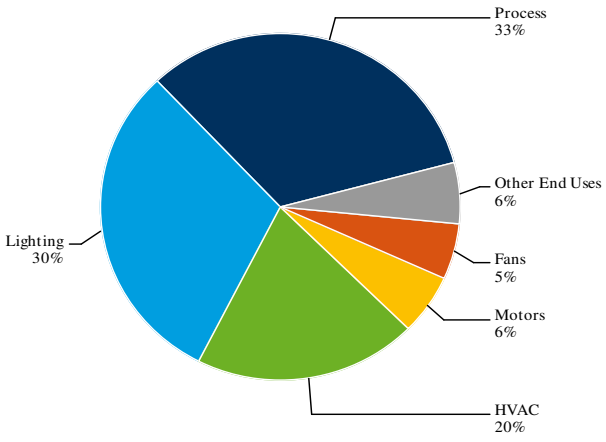
Total: 6 aMW



Note: 'Other End Uses' includes:
Other: 5%, Fans: 2%

Figure C-4.145. Achievable Technical Potential - Wyoming: Industrial Mach./Equip by End Use

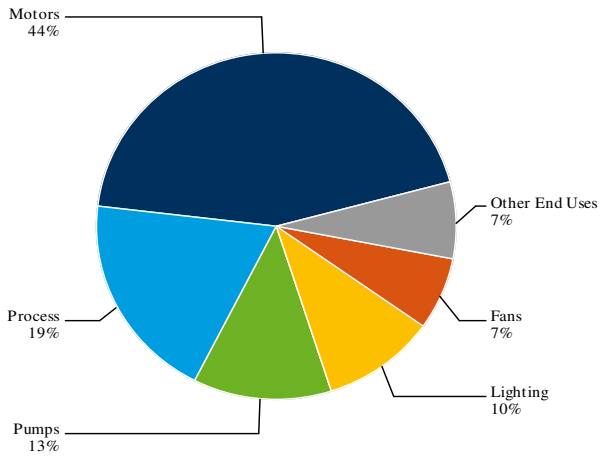
Total: 19 aMW



Note: 'Other End Uses' includes:
Other: 4%, Pumps: 2%

Figure C-4.146. Achievable Technical Potential - Wyoming: Industrial Lumber by End Use

Total: 9 aMW



Note: 'Other End Uses' includes:
HVAC: 5%, Other: 3%

Figure C-4.147. Achievable Technical Potential - Wyoming: Industrial Mining by End Use

Total: 3 aMW

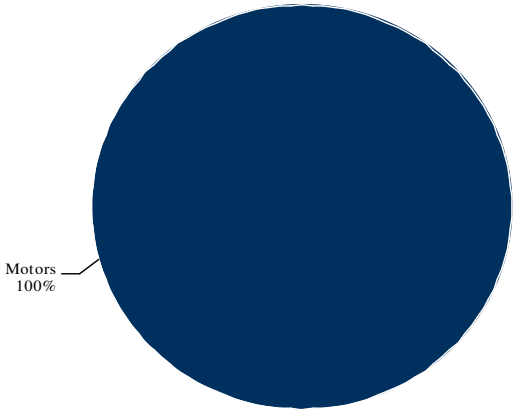
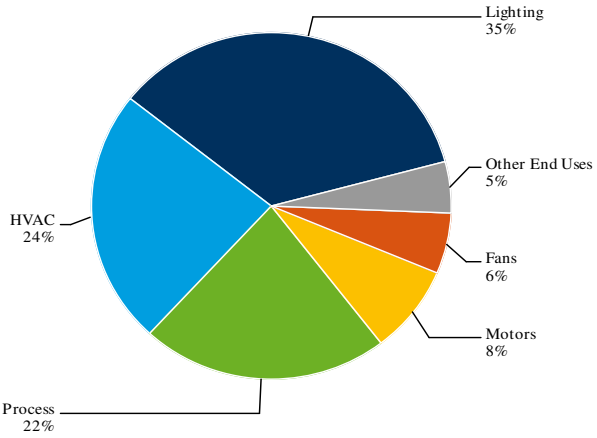


Figure C-4.148. Achievable Technical Potential - Wyoming: Industrial Miscellaneous Mfg by End Use

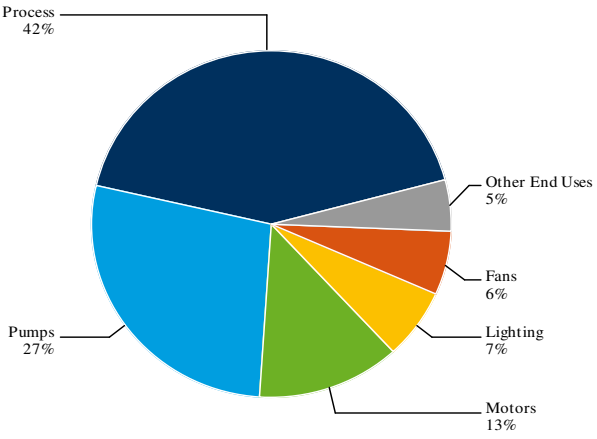
Total: 10 aMW



Note: 'Other End Uses' includes:
Other: 2%, Pumps: 2%

Figure C-4.149. Achievable Technical Potential - Wyoming: Industrial Petroleum by End Use

Total: 3 aMW



Note: 'Other End Uses' includes:
HVAC: 4%, Other: <1%

Figure C-4.150. Achievable Technical Potential - Wyoming: Industrial Stone Clay Glass Products by End Use

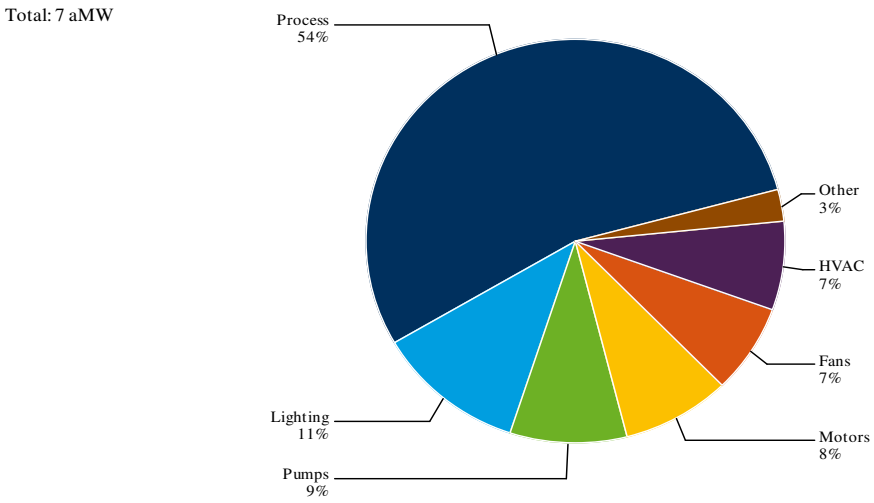
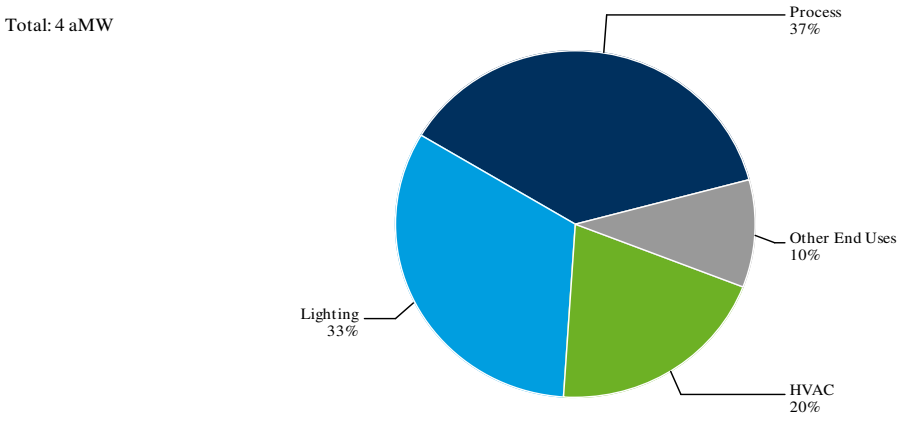
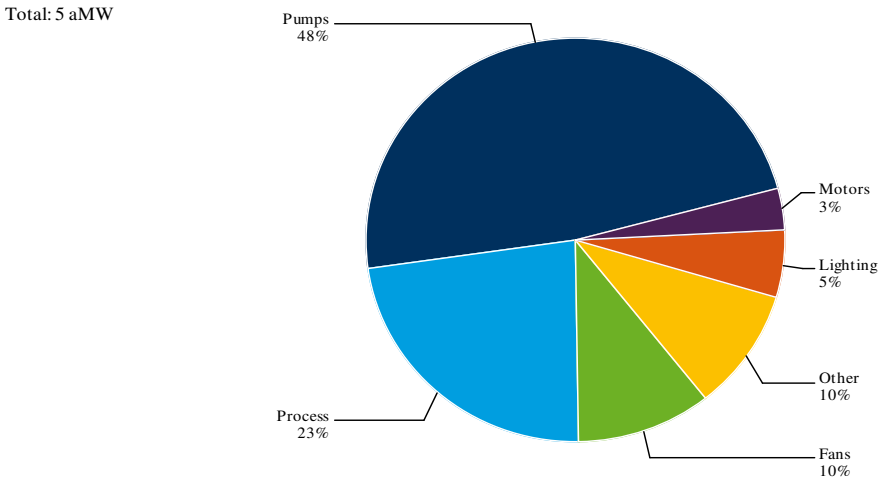


Figure C-4.151. Achievable Technical Potential - Wyoming: Industrial Transportation by End Use



Note: 'Other End Uses' includes:
Motors: 4%, Fans: 2%, Other: 2%, Pumps: 2%

Figure C-4.152. Achievable Technical Potential - Wyoming: Industrial Water/Wastewater by End Use



APPENDIX C-5. PACIFICORP MEASURE COMPARISON TO THE ENERGY TRUST OF OREGON

The Energy Trust of Oregon, Inc. (Energy Trust), recently completed a resource assessment[1] of potential energy efficiency and renewable energy measures to provide electricity and natural gas demand-side savings for Oregon consumers by 2030 within the Energy Trust's service territory. Cadmus reviewed descriptions of these Energy Trust measures and compiled a list of the comparable PacifiCorp measure names by state (California, Idaho, Utah, Washington, and Wyoming).

The following three tables present residential, commercial, and industrial measure names. Each table includes the sector, Energy Trust measure name, and PacifiCorp's measure names for each state. Notes in the far right column provide additional detail for certain measures. Irrigation and street lighting are included as part of industrial.[2]

[1] Resource Assessment for Energy Trust of Oregon – Final Report 3/28/11: http://energytrust.org/library/reports/021611_ResourceAssessment.pdf

[2] In this appendix (C-5) industrial, irrigation, and street lighting are all combine into table. In appendix C-2 they are presented in separate tables.

Table C-5.1. Comparison of Energy Trust and PacifiCorp Residential Measure Names

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	100% LED after 2020	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	
Residential	50% LED after 2020	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	
Residential	AC Tune - up (Z A, Z B)	Tune-up - Central Air Conditioner	Tune-up - Central Air Conditioner	Tune-up - Central Air Conditioner	Tune-up - Central Air Conditioner	Tune-up - Central Air Conditioner	
Residential	Add 16 LED lamps (using CFL base) after 2015	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	
Residential	Add 16 LED lamps (using incand base) after 2015	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	
Residential	Add 6 LED lamps (using CFL base) after 2015	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	Lighting Specialty Lamp - Premium Efficiency LED	
Residential	Add 6 LED lamps (using incand base) after 2015	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	
Residential	All LED (from 2020 base) after 2020	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	Lighting General Service Lamp - Premium Efficiency LED	
Residential	Commissioning (HP), Z A, Z B	Quality Installation - Heat Pump	Quality Installation - Heat Pump	Quality Installation - Heat Pump	Quality Installation - Heat Pump	Quality Installation - Heat Pump	
Residential	Common Area Lighting (MF Only)						Multifamily common area was treated in the commercial sector.

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	Duct Sealing , Z A, Z B, Z C	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	
Residential	E* lighting (18 lamps)						See CFL and LED measures. Measures are considered individually in the study.
Residential	Eco Rated New Manufactured Home						Measures are considered individually in the study.
Residential	Elec ETO Dishwasher	Dishwasher - ENERGY STAR	Dishwasher - ENERGY STAR	Dishwasher - ENERGY STAR	Dishwasher - RTF ENERGY STAR	Dishwasher - ENERGY STAR	
		Dishwasher - Enhanced Efficiency	Dishwasher - Enhanced Efficiency	Dishwasher - Enhanced Efficiency	Dishwasher - RTF Enhanced Efficiency	Dishwasher - Enhanced Efficiency	
Residential	Elec Hi-eff Washer	Clothes Washer - ENERGY STAR	Clothes Washer - ENERGY STAR	Clothes Washer - ENERGY STAR	Clothes Washer - RTF Tier 1	Clothes Washer - ENERGY STAR	
Residential	Elec MEF 2.46 Washer	Clothes Washer - CEE Tier 3	Clothes Washer - CEE Tier 3	Clothes Washer - CEE Tier 3	Clothes Washer - RTF Tier 3	Clothes Washer - CEE Tier 3	
Residential	Energy Star HRV	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	
Residential	Energy Star New Home BOP 1 - ER						Measures are considered individually in the study.
Residential	Energy Star New Home BOP 1 - Heat Pump						Measures are considered individually in the study.
Residential	Energy Star New Manufactured Home						Measures are considered individually in the study.
Residential	Energy Star Television	TV - ENERGY STAR	TV - ENERGY STAR	TV - ENERGY STAR	TV - ENERGY STAR	TV - ENERGY STAR	
Residential	ER> Mini-split ductless heat pump Z A, Z B-C	Ductless Heat Pump (DHP)	Ductless Heat Pump (DHP)	Ductless Heat Pump (DHP)	Ductless Heat Pump (DHP)	Ductless Heat Pump (DHP)	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	Estar Refrigerator	Refrigerator - ENERGY STAR	Refrigerator - ENERGY STAR	Refrigerator - ENERGY STAR	Refrigerator - RTF Tier 1 (ENERGY STAR)	Refrigerator - ENERGY STAR	RTF measure modeled in WA only.
Residential	Evaporative Cooling (Direct/indirect) (Z A, Z B)	Central Cooling - Standard Evaporative Cooler	Central Cooling - Standard Evaporative Cooler	Central Cooling - Standard Evaporative Cooler	Central Cooling - Standard Evaporative Cooler	Central Cooling - Standard Evaporative Cooler	
		Central Cooling - Premium Evaporative Cooler	Central Cooling - Premium Evaporative Cooler	Central Cooling - Premium Evaporative Cooler	Central Cooling - Premium Evaporative Cooler	Central Cooling - Premium Evaporative Cooler	
Residential	Full lighting (all high efficacy)						Measures are considered individually in the study.
Residential	Heat Pump, (ER Base), Z A, Z B	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Baseline: Standard Electric Furnace - HSPF 1.0
Residential	Heat Pump, (HP Upgrade), Z A , Z B	Heat Pump - Air Source ENERGY STAR	Heat Pump - Air Source ENERGY STAR	Heat Pump - Air Source ENERGY STAR	Heat Pump - Air Source ENERGY STAR	Heat Pump - Air Source ENERGY STAR	Baseline: Heat Pump - Air Source Federal Standard 2006
		Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Heat Pump - Air Source CEE Tier 2	Baseline: Heat Pump - Air Source Federal Standard 2006
		Heat Pump - Air Source Enhanced	Heat Pump - Air Source Enhanced	Heat Pump - Air Source Enhanced	Heat Pump - Air Source Enhanced	Heat Pump - Air Source Enhanced	Baseline: Heat Pump - Air Source Federal Standard 2006
					Heat Pump - Air Source RTF Tier 1		Baseline: Heat Pump - Air Source Federal Standard 2006. RTF measure modeled in WA only.
					Heat Pump - Air Source RTF Tier 2		Baseline: Heat Pump - Air Source Federal Standard 2006. RTF measure modeled in WA only.
Residential	High SEER CAC, (SEER 15) (Z A, Z B)	Central Air Conditioner - ENERGY STAR	Central Air Conditioner - ENERGY STAR	Central Air Conditioner - ENERGY STAR	Central Air Conditioner - ENERGY STAR	Central Air Conditioner - ENERGY STAR	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	HRV ER, Z A, Z B	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	
Residential	HRV HP Z A, Z B	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	
Residential	HRV, Z A, Z B, Z C	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	Air-to-Air Heat Exchanger	
Residential	LowPowerMode Appliances						Measure not included in the study directly. Most ENERGY STAR appliances and plug load devices include low watt standby modes.
Residential	MF Corridor Ventilation						Multifamily common area was treated in the commercial sector.
Residential	MH Duct Sealing, Z A, Z B, Z C	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	
Residential	MH Duct Sealing, Elect Resis, Z A, Z B	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - RTF	Duct Sealing and Insulation - Code	RTF measure modeled in WA only.
Residential	MH Duct Sealing, Heat Pump, Z A, Z B	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - RTF	Duct Sealing and Insulation - Code	RTF measure modeled in WA only.
Residential	New MF Construction						Measures are considered individually in the study.
Residential	Refrigerator Recycle	Refrigerator - Removal of Secondary	Refrigerator - Removal of Secondary	Refrigerator - Removal of Secondary	Refrigerator - Removal of Secondary	Refrigerator - Removal of Secondary	
Residential	Retail Lights (2 lamps) after 2014	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	
Residential	Retail Lights (2 lamps) to 2014	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	Lighting General Service Lamp - High Efficiency CFL	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	Room AC (Z A, Z B)	Room AC - ENERGY STAR	Room AC - ENERGY STAR	Room AC - ENERGY STAR	Room AC - ENERGY STAR	Room AC - ENERGY STAR	
Residential	SF Duct Sealing, Z A, Z B	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	
Residential	Solar DHW (50 gal) - elec backup						Included in Supplemental Resource analysis.
Residential	Specialty Lights after 2014	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	
Residential	Specialty Lights to 2014	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	Lighting Specialty Lamp - High Efficiency CFL	
Residential	Tank upgrade (50 gal)-10 yr warranty	Water Heater - Federal Standard 2015 Storage	Water Heater - Federal Standard 2015 Storage	Water Heater - Federal Standard 2015 Storage	Water Heater - RTF Market Standard Storage	Water Heater - Federal Standard 2015 Storage	Due to the new standards in 2015 for water heaters, high efficiency storage water heaters were named "Water Heater - Federal Standard 2015 Storage" for all states except WA. For WA the measure is "Water Heater - RTF Market Standard Storage."
Residential	Tank upgrade (50 gal)-20 yr warranty	Water Heater - Federal Standard 2015 Storage	Water Heater - Federal Standard 2015 Storage	Water Heater - Federal Standard 2015 Storage	Water Heater - RTF Market Standard Storage	Water Heater - Federal Standard 2015 Storage	Due to the new standards in 2015 for water heaters, high efficiency storage water heaters were named "Water Heater - Federal Standard 2015 Storage."
Residential	Tier I Heat pump water heater	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	
Residential	Tier II Heat pump water heater	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - RTF Tier 1	Heat Pump Water Heater - ENERGY STAR	RTF measure modeled in WA only.
Residential	Window replace (U=.30), ER Z A, Z B	Window (CA) - Tier 1 Above Code	Window (ID) - Tier 1 Above Code	Window (UT) - Tier 1 Above Code	Window (WA) - Tier 1 Above Code	Window (WY) - Tier 1 Above Code	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	Window replace (U=.30), HP Z A, Z B	Window (CA) - Tier 1 Above Code	Window (ID) - Tier 1 Above Code	Window (UT) - Tier 1 Above Code	Window (WA) - Tier 1 Above Code	Window (WY) - Tier 1 Above Code	
Residential	Window, retro (U=.20), Z A, Z B, Z C	Window (CA) - Tier 3 Above Code	Window (ID) - Tier 3 Above Code	Window (UT) - Tier 3 Above Code	Window (WA) - Tier 3 Above Code	Window (WY) - Tier 3 Above Code	
Residential	Window, retro (U=.35), Z A, Z B, Z C	Window (CA) - Code	Window (ID) - Code	Window (UT) - Code	Window (WA) - Code	Window (WY) - Code	
Residential	Windows U=.30, ER, Z A, Z B	Window (CA) - Tier 1 Above Code	Window (ID) - Tier 1 Above Code	Window (UT) - Tier 1 Above Code	Window (WA) - Tier 1 Above Code	Window (WY) - Tier 1 Above Code	
Residential	Windows U=.30, HP, Z A, Z B	Window (CA) - Tier 1 Above Code	Window (ID) - Tier 1 Above Code	Window (UT) - Tier 1 Above Code	Window (WA) - Tier 1 Above Code	Window (WY) - Tier 1 Above Code	
Residential	Wx (ceiling, floor, wall) ER, Z A, Z B						Measures are considered individually in the study.
Residential	Wx (ceiling, floor, wall) HP, Z A, Z B						Measures are considered individually in the study.
Residential	Wx (ceiling,floor) ER, Z A, Z B						Measures are considered individually in the study.
Residential	Wx (ceiling,floor) HP, Z A, Z B						Measures are considered individually in the study.
Residential	Wx Air Sealing, Z A, Z B, Z C	Infiltration Control	Infiltration Control	Infiltration Control	Infiltration Control	Infiltration Control	
Residential	Wx insulation (ceiling, floor), Z A, Z B, Z C						Measures are considered individually in the study.
Residential	Wx insulation (ceiling, floor, walls), Z A, Z B, Z C						Measures are considered individually in the study.

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Residential	Wx SF Ceiling Insulation, Zone A, Zone B, Zone C	Ceiling Insulation (CA) - Above Code	Ceiling Insulation (ID) - Above Code	Ceiling Insulation (UT) - Above Code	Ceiling Insulation (WA) - Above Code	Ceiling Insulation (WY) - Above Code	
		Ceiling Insulation (CA) - Code	Ceiling Insulation (ID) - Code	Ceiling Insulation (UT) - Code	Ceiling Insulation (WA) - Code	Ceiling Insulation (WY) - Code	
Residential	Wx SF Duct Sealing, Z A, Z B, Z C	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	Duct Sealing and Insulation - Code	
Residential	Wx SF Floor Insulation, Zone A, Zone B, Zone C	Floor Insulation (CA) - Above Code	Floor Insulation (ID) - Above Code	Floor Insulation (UT) - Above Code	Floor Insulation (WA) - Above Code	Floor Insulation (WY) - Above Code	
		Floor Insulation (CA) - Code	Floor Insulation (ID) - Code	Floor Insulation (UT) - Code	Floor Insulation (WA) - Code	Floor Insulation (WY) - Code	
Residential	Wx SF Wall Insulation, Zone A, Zone B, Zone C	Wall Insulation 2x4 (CA) - Below Code	Wall Insulation 2x4 (ID) - Below Code	Wall Insulation 2x4 (UT) - Below Code	Wall Insulation 2x4 (WA) - Below Code	Wall Insulation 2x4 (WY) - Below Code	
		Wall Insulation 2x6 (CA) - Above Code	Wall Insulation 2x6 (ID) - Above Code	Wall Insulation 2x6 (UT) - Above Code	Wall Insulation 2x6 (WA) - Above Code	Wall Insulation 2x6 (WY) - Above Code	
		Wall Insulation 2x6 (CA) - Code	Wall Insulation 2x6 (ID) - Code	Wall Insulation 2x6 (UT) - Code	Wall Insulation 2x6 (WA) - Code	Wall Insulation 2x6 (WY) - Code	

Table C-5.2. Comparison of Energy Trust and PacifiCorp Commercial Measure Names

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Cooling-2010 CEE Tier 1 AC - 15 ton (at rep), (new)	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency	DX Package 135 to 240 kBTU/hr - High Efficiency	
Commercial	Cooling-2010 CEE Tier 1 AC - 25 ton (at rep), (new)		DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	Measure applies to large office and/or retail which was not modeled in CA.
Commercial	Cooling-2010 CEE Tier 1 AC - 3 ton (at rep), (new)						Less than 5 ton (residential sized) units were not included in the commercial sector.
Commercial	Cooling-2010 CEE Tier 1 AC - 7.5 ton (at rep), (new)	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency	DX Package 65 to 135 kBTU/hr - High Efficiency	
Commercial	Cooling-2010 CEE Tier 3 AC - 15 ton (at rep), (new)	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency	DX Package 135 to 240 kBTU/hr - Premium Efficiency	
Commercial	Cooling-2010 CEE Tier 3 AC - 25 ton (at rep), (new)		DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	DX Package 240 to 760 kBTU/hr - High Efficiency	Measure applies to large office and/or retail which was not modeled in CA.
Commercial	Cooling-2010 CEE Tier 3 AC - 3 ton (at rep), (new)						Less than 5 ton (residential sized) units were not included in the commercial sector.
Commercial	Cooling-2010 CEE Tier 3 AC - 7.5 ton (at rep), (new)	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency	DX Package 65 to 135 kBTU/hr - Premium Efficiency	
Commercial	Ceramic Metal Halide	Lighting Interior - Metal Halide - Above Standard	Lighting Interior - Metal Halide - Above Standard	Lighting Interior - Metal Halide - Above Standard	Lighting Interior - Metal Halide - Above Standard	Lighting Interior - Metal Halide - Above Standard	
Commercial	CFL 9W to 39W hardwired	Lighting Interior - Screw Base CFL - Above Standard	Lighting Interior - Screw Base CFL - Above Standard	Lighting Interior - Screw Base CFL - Above Standard	Lighting Interior - Screw Base CFL - Above Standard	Lighting Interior - Screw Base CFL - Above Standard	All CFL potential was included under this measure regardless of application type (hardwired vs. non-hardwired).

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Chiller System Optimization	Chilled Water / Condenser Water Settings-Optimization	Chilled Water / Condenser Water Settings-Optimization	Chilled Water / Condenser Water Settings-Optimization	Chilled Water / Condenser Water Settings-Optimization	Chilled Water / Condenser Water Settings-Optimization	
Commercial	Chiller Tower 6F approach	Cooling Tower-Decrease Approach Temperature	Cooling Tower-Decrease Approach Temperature	Cooling Tower-Decrease Approach Temperature	Cooling Tower-Decrease Approach Temperature	Cooling Tower-Decrease Approach Temperature	
Commercial	Computerized Water Heater Control	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Energy Trust measure refers to installation of intelligent controls on the hot water circulation loops. Assumed similar to demand controlled circulating systems.
Commercial	Covered Parking Regional Average - New, NR	Covered Parking Lighting	Covered Parking Lighting	Covered Parking Lighting	Covered Parking Lighting	Covered Parking Lighting	
Commercial	Daylight Control (overhead)	Dimming-Continuous, Fluorescent Fixtures	Dimming-Continuous, Fluorescent Fixtures	Dimming-Continuous, Fluorescent Fixtures	Dimming-Continuous, Fluorescent Fixtures	Dimming-Continuous, Fluorescent Fixtures	
Commercial	Daylight perimeter zone	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	
Commercial	DCV	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	
Commercial	DDC HVAC controls	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	DestratificationFan						This measure was not included in the study. High uncertainty in savings potential and limited applicability in PacifiCorp territory.
Commercial	DHW Faucets	Low-Flow Faucet Aerators	Low-Flow Faucet Aerators	Low-Flow Faucet Aerators	Low-Flow Faucet Aerators	Low-Flow Faucet Aerators	
Commercial	DHW Pipe Ins	Hot Water (SHW) Pipe Insulation	Hot Water (SHW) Pipe Insulation	Hot Water (SHW) Pipe Insulation	Hot Water (SHW) Pipe Insulation	Hot Water (SHW) Pipe Insulation	
Commercial	DHW Recirc Controls	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	Demand Controlled Circulating Systems	
Commercial	DHW Shower Heads	Low-Flow Showerheads	Low-Flow Showerheads	Low-Flow Showerheads	Low-Flow Showerheads	Low-Flow Showerheads	
Commercial	DHW Wrap						This measure was not included in the study. Measure not included as part of PacifiCorp's program offerings. Low remaining potential.
Commercial	Ducts	Duct Repair and Sealing	Duct Repair and Sealing	Duct Repair and Sealing	Duct Repair and Sealing	Duct Repair and Sealing	
		Insulation - Duct	Insulation - Duct	Insulation - Duct	Insulation - Duct	Insulation - Duct	
Commercial	ECM Fan Powered Boxes New	Motor - VAV Box High Efficiency (ECM)	Motor - VAV Box High Efficiency (ECM)	Motor - VAV Box High Efficiency (ECM)		Motor - VAV Box High Efficiency (ECM)	
Commercial	Economizer Diagnostic, Damper Repair & Reset	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	DX Tune-Up / Diagnostics	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Efficient Estar Dishwasher	Dishwasher Residential	Dishwasher Residential	Dishwasher Residential	Dishwasher Residential	Dishwasher Residential	
		Dishwashing - Commercial - High Temp	Dishwashing - Commercial - High Temp	Dishwashing - Commercial - High Temp	Dishwashing - Commercial - High Temp	Dishwashing - Commercial - High Temp	
		Dishwashing - Commercial - Low Temp	Dishwashing - Commercial - Low Temp	Dishwashing - Commercial - Low Temp	Dishwashing - Commercial - Low Temp	Dishwashing - Commercial - Low Temp	
Commercial	EMS Retrofit	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Direct Digital Control System-Optimization	Installation of EMS or DDC system was not included in this study. Optimization of existing EMS/DDC was included.
Commercial	Estar Commercial Clothes Washer	Clothes Washer Commercial	Clothes Washer Commercial	Clothes Washer Commercial	Clothes Washer Commercial	Clothes Washer Commercial	
Commercial	Estar Convection Oven	High Efficiency Convection Oven	High Efficiency Convection Oven	High Efficiency Convection Oven	High Efficiency Convection Oven	High Efficiency Convection Oven	
Commercial	EStar Fryer	Fryers - New CEE Efficient Electric Deep Fat Fryers	Fryers - New CEE Efficient Electric Deep Fat Fryers	Fryers - New CEE Efficient Electric Deep Fat Fryers	Fryers - New CEE Efficient Electric Deep Fat Fryers	Fryers - New CEE Efficient Electric Deep Fat Fryers	
Commercial	EStar Griddle	Griddle	Griddle	Griddle	Griddle	Griddle	
Commercial	EStar Steam Cooker	Steam Cooker	Steam Cooker	Steam Cooker	Steam Cooker	Steam Cooker	
Commercial	Exit Signs	Exit Sign - LED	Exit Sign - LED	Exit Sign - LED	Exit Sign - LED	Exit Sign - LED	
		Exit Sign - Photoluminescent or Tritium	Exit Sign - Photoluminescent or Tritium	Exit Sign - Photoluminescent or Tritium	Exit Sign - Photoluminescent or Tritium	Exit Sign - Photoluminescent or Tritium	
Commercial	Exterior LED Lighting	Exterior Building Lighting	Exterior Building Lighting	Exterior Building Lighting	Exterior Building Lighting	Exterior Building Lighting	LED technology is bundled in this measure.
Commercial	Floating Head Control	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Ground Source Heat Pump - Air Source HP Base	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	Ground Source Heat Pump Replacing Air Source Heat Pump 65 to 135 kBTU/hr - Advanced Efficiency	
Commercial	Heat Pump Water Heat	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - ENERGY STAR	Heat Pump Water Heater - RTF Tier 1	Heat Pump Water Heater - ENERGY STAR	
Commercial	Heat Pump, 2010 CEE Tier 1	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	Air Source Heat Pump 65 to 135 kBTU/hr - High Efficiency	
Commercial	Heat Reclaim	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	Exhaust Air to Ventilation Air Heat Recovery	
		Water Cooled Refrigeration with Heat Recovery	Water Cooled Refrigeration with Heat Recovery	Water Cooled Refrigeration with Heat Recovery	Water Heater - RTF Market Standard Storage	Water Cooled Refrigeration with Heat Recovery	
Commercial	High Bay HID Large to T5	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	
Commercial	High Bay HID Medium to T8	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	Lighting Interior - High Bay Fluorescent High Output - Above Standard	
Commercial	High Efficacy LED Display	Display Case LEDs	Display Case LEDs	Display Case LEDs	Display Case LEDs	Display Case LEDs	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	High Efficiency Chiller	Chillers <150 tons (screw) - High Efficiency	Chillers <150 tons (screw) - High Efficiency	Chillers <150 tons (screw) - High Efficiency	Chillers <150 tons (screw) - High Efficiency	Chillers <150 tons (screw) - High Efficiency	
		Chillers 150-300 tons (screw) - High Efficiency	Chillers 150-300 tons (screw) - High Efficiency	Chillers 150-300 tons (screw) - High Efficiency	Chillers 150-300 tons (screw) - High Efficiency	Chillers 150-300 tons (screw) - High Efficiency	
			Chillers >300 tons (centrifugal) - High Efficiency	Chillers >300 tons (centrifugal) - High Efficiency	Chillers >300 tons (centrifugal) - High Efficiency	Chillers >300 tons (centrifugal) - High Efficiency	Measure applies to large office and/or retail which was not modeled in CA.
Commercial	Hot Food Holding Cabinet	Hot Food Holding Cabinet	Hot Food Holding Cabinet	Hot Food Holding Cabinet	Hot Food Holding Cabinet	Hot Food Holding Cabinet	
Commercial	HVAC System Commissioning						Commissioning for new construction was not included in this study. Recommissioning was included for existing construction in this study.
Commercial	HVAC System Retro Commissioning	Re-Commissioning	Re-Commissioning	Re-Commissioning	Re-Commissioning	Re-Commissioning	
Commercial	Indirect/Direct Evaporative Cooling ~20 ton	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 135 to 240 kBTU/hr - Advanced Efficiency	
Commercial	Indirect/Direct Evaporative Cooling >60 ton	Evaporative Cooler replaces DX Package 65 to 135 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	Evaporative Cooler replaces DX Package 240 to 760 kBTU/hr - Advanced Efficiency	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Install Economizer	Chiller-Water Side Economizer	Chiller-Water Side Economizer	Chiller-Water Side Economizer	Chiller-Water Side Economizer	Chiller-Water Side Economizer	
		DX Package-Air Side Economizer	DX Package-Air Side Economizer	DX Package-Air Side Economizer	DX Package-Air Side Economizer	DX Package-Air Side Economizer	
Commercial	Lighting Scheduling/ Controls				Time Clock		Measure based on PacifiCorp's program offering.
		Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	Daylighting Controls, Outdoors (Photocell)	
		Bi-Level Control, Stairwell Lighting	Bi-Level Control, Stairwell Lighting	Bi-Level Control, Stairwell Lighting	Bi-Level Control, Stairwell Lighting	Bi-Level Control, Stairwell Lighting	
Commercial	Mini-Split Heat Pump						Mini-split heat pumps not included in commercial sector. Measure included in the residential sector.
Commercial	Occupancy Sensors	Occupancy Sensor Control	Occupancy Sensor Control	Occupancy Sensor Control	Occupancy Sensor Control	Occupancy Sensor Control	
Commercial	Ozone Laundry Treatment						Measure not included in the study. All clothes washers were included under Clothes Washer Commercial.
Commercial	Roof Insulation - Attic 11-30, R0-30	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	
Commercial	Roof Insulation - Blanket R0-19, R0-30	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	
Commercial	Roof Insulation - Blanket R11-30, R11-41	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	
Commercial	Roof Insulation - Rigid R0-11, R0-22	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Roof Insulation - Rigid R11-22, R11-33	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	
Commercial	Roof Insulation - Roofcut 0-22	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	Insulation - Ceiling	
Commercial	RTU Fleet DCV - NO HR	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Measure applications bundled into one measure.
Commercial	RTU Fleet DCV - With Heat Rec	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Automated Ventilation VFD Control (Occupancy Sensors / CO2 Sensors)	Measure applications bundled into one measure.
Commercial	Solar Hot Water						Included in Supplemental Resource analysis.
Commercial	Surface Parking Regional Average - New, NR, Retro	Surface Parking Lighting	Surface Parking Lighting	Surface Parking Lighting	Surface Parking Lighting	Surface Parking Lighting	
Commercial	Sweep Control						This measure was not included in the study. While sweep control technology is different from occupancy control, PacifiCorp assumed all potential can be found under lighting controls of Occupancy Sensor Control.
Commercial	T12, T8 to HP T8	Lighting Interior - Fluorescent High Performance - Above Standard	Lighting Interior - Fluorescent High Performance - Above Standard	Lighting Interior - Fluorescent High Performance - Above Standard	Lighting Interior - Fluorescent High Performance - Above Standard	Lighting Interior - Fluorescent High Performance - Above Standard	

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Transformers	Power Supply Transformer/Converter	Power Supply Transformer/Converter	Power Supply Transformer/Converter	Power Supply Transformer/Converter	Power Supply Transformer/Converter	
Commercial	VSD on HVAC motors	Motor - Pump & Fan System - Variable Speed Control	Motor - Pump & Fan System - Variable Speed Control	Motor - Pump & Fan System - Variable Speed Control	Motor - Pump & Fan System - Variable Speed Control	Motor - Pump & Fan System - Variable Speed Control	
Commercial	Wall Insulation - Blown R11	Insulation - Wall	Insulation - Wall	Insulation - Wall	Insulation - Wall	Insulation - Wall	
Commercial	Wall Insulation - Spray On for Metal Buildings	Insulation - Wall	Insulation - Wall	Insulation - Wall	Insulation - Wall	Insulation - Wall	
Commercial	Waste Water Heat Exchanger	Drainwater Heat Recovery Water Heater	Drainwater Heat Recovery Water Heater	Drainwater Heat Recovery Water Heater	Drainwater Heat Recovery Water Heater	Drainwater Heat Recovery Water Heater	
Commercial	Water Source Heat Pump High Efficiency						Measure not included in the study. Other heat pumps were included in this study are: Air Source Heat Pump and Ground Source Heat Pump.
Commercial	Windows - Add Argon to Vinyl Lowe	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.
Commercial	Windows - Add Low E and Argon to Vinyl Tint	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.

Sector	Energy Trust Measure Name	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Commercial	Windows - Add Low E to Vinyl Tint	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.
Commercial	Windows - Non-Tinted AL Code to Class 36,40,45	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.
Commercial	Windows - Double to Class 36, 40, 45, VEA	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.
Commercial	Windows - Single to Class 36, 40, 45,VEA	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.
Commercial	Windows - Tinted AL Code to Class 36, 40, 45	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	Windows-High Efficiency	PacifiCorp did not include the exact Energy Trust measure iteration for windows. PacifiCorp's measure varies by equipment U-value, but does not map directly to the Energy Trust measure name.

Table C-5.3. Comparison of Energy Trust and PacifiCorp Industrial Measure Names

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Air Compressor Demand Reduction	Air Compressor Demand Reduction	Air Compressor Demand Reduction	Air Compressor Demand Reduction	Air Compressor Demand Reduction	Air Compressor Demand Reduction	
Industrial	Air Compressor Equipment1 & 2	Air Compressor Equipment	Air Compressor Equipment	Air Compressor Equipment	Air Compressor Equipment	Air Compressor Equipment	
Industrial	Air Compressor Optimization	Air Compressor Optimization	Air Compressor Optimization	Air Compressor Optimization	Air Compressor Optimization	Air Compressor Optimization	
Industrial	Clean Room: Change Filter Strategy		Clean Room: Change Filter Strategy	Clean Room: Change Filter Strategy	Clean Room: Change Filter Strategy	Clean Room: Change Filter Strategy	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Clean Room: Chiller Optimize		Clean Room: Chiller Optimize	Clean Room: Chiller Optimize	Clean Room: Chiller Optimize	Clean Room: Chiller Optimize	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Clean Room: Clean Room HVAC		Clean Room: Clean Room HVAC	Clean Room: Clean Room HVAC	Clean Room: Clean Room HVAC	Clean Room: Clean Room HVAC	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Cold Storage Retrofit	Cold Storage Retrofit	Cold Storage Retrofit	Cold Storage Retrofit	Cold Storage Retrofit	Cold Storage Retrofit	
Industrial	Cold Storage Tuneup	Cold Storage Tuneup	Cold Storage Tuneup	Cold Storage Tuneup	Cold Storage Tuneup	Cold Storage Tuneup	
Industrial	Efficient Centrifugal Fan	Efficient Centrifugal Fan	Efficient Centrifugal Fan	Efficient Centrifugal Fan	Efficient Centrifugal Fan	Efficient Centrifugal Fan	

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Efficient Lighting 1, 2,3 Shift	T8 High Performance Linear Florescent	T8 High Performance Linear Florescent	T8 High Performance Linear Florescent	T8 High Performance Linear Florescent	T8 High Performance Linear Florescent	
		T5 Linear Florescent	T5 Linear Florescent	T5 Linear Florescent	T5 Linear Florescent	T5 Linear Florescent	
		T8 Reduced Wattage Linear Florescent	T8 Reduced Wattage Linear Florescent	T8 Reduced Wattage Linear Florescent	T8 Reduced Wattage Linear Florescent	T8 Reduced Wattage Linear Florescent	
		T8 Linear Florescent	T8 Linear Florescent	T8 Linear Florescent	T8 Linear Florescent	T8 Linear Florescent	
		Screw Base CFL	Screw Base CFL	Screw Base CFL	Screw Base CFL	Screw Base CFL	
		Screw Base LED	Screw Base LED	Screw Base LED	Screw Base LED	Screw Base LED	
Industrial	Elec Chip Fab: Eliminate Exhaust		Elec Chip Fab: Eliminate Exhaust	Elec Chip Fab: Eliminate Exhaust	Elec Chip Fab: Eliminate Exhaust	Elec Chip Fab: Eliminate Exhaust	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Elec Chip Fab: Exhaust Injector		Elec Chip Fab: Exhaust Injector	Elec Chip Fab: Exhaust Injector	Elec Chip Fab: Exhaust Injector	Elec Chip Fab: Exhaust Injector	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Elec Chip Fab: Reduce Gas Pressure		Elec Chip Fab: Reduce Gas Pressure	Elec Chip Fab: Reduce Gas Pressure	Elec Chip Fab: Reduce Gas Pressure	Elec Chip Fab: Reduce Gas Pressure	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Elec Chip Fab: Solidstate Chiller		Elec Chip Fab: Solidstate Chiller	Elec Chip Fab: Solidstate Chiller	Elec Chip Fab: Solidstate Chiller	Elec Chip Fab: Solidstate Chiller	Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Energy Project Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Single measure includes Plant Energy Management, Energy Project Management, Pump Energy Management
Industrial	Fan Energy Management	Improved Controls - Fans	Improved Controls - Fans	Improved Controls - Fans	Improved Controls - Fans	Improved Controls - Fans	
Industrial	Fan Equipment Upgrade	Fan Equipment Upgrade	Fan Equipment Upgrade	Fan Equipment Upgrade	Fan Equipment Upgrade	Fan Equipment Upgrade	
Industrial	Fan System Optimization	Fan System Optimization	Fan System Optimization	Fan System Optimization	Fan System Optimization	Fan System Optimization	

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Food: Cooling and Storage	Food: Cooling and Storage	Food: Cooling and Storage	Food: Cooling and Storage	Food: Cooling and Storage	Food: Cooling and Storage	
Industrial	Food: Refrig Storage Tuneup						This measure was accounted for in the commercial sector: Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Tuneup.
Industrial	Grocery Distribution Retrofit						This measure was not in the study. Segmentation of grocery distribution centers was not included in study.
Industrial	Grocery Distribution Tuneup						This measure was not in the study. Segmentation of grocery distribution centers was not included in study.
Industrial	HighBay Lighting 1, 2, 3 Shift	Efficient Metal Halide (High Bay)	Efficient Metal Halide (High Bay)	Efficient Metal Halide (High Bay)	Efficient Metal Halide (High Bay)	Efficient Metal Halide (High Bay)	
		Induction (High Bay)	Induction (High Bay)	Induction (High Bay)	Induction (High Bay)	Induction (High Bay)	
		LED (High Bay)	LED (High Bay)	LED (High Bay)	LED (High Bay)	LED (High Bay)	
		Linear Fluorescent (High Bay)	Linear Fluorescent (High Bay)	Linear Fluorescent (High Bay)	Linear Fluorescent (High Bay)	Linear Fluorescent (High Bay)	
		Metal Halide (High Bay)	Metal Halide (High Bay)	Metal Halide (High Bay)	Metal Halide (High Bay)	Metal Halide (High Bay)	
Industrial	Integrated Plant Energy Management	Recommissioning / Facility Energy Management	Recommissioning / Facility Energy Management	Recommissioning / Facility Energy Management	Recommissioning / Facility Energy Management	Recommissioning / Facility Energy Management	
Industrial	Irrigation: Ditch > Pipe						This measure was not in the study. All irrigation improvement measures were bundled in one measure: Irrigation System Improvements.

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Irrigation: Nozzles, Pump Systems Adjust, Pump Systems Repair	Irrigation System Improvements	Irrigation System Improvements	Irrigation System Improvements	Irrigation System Improvements	Irrigation System Improvements	
Industrial	Irrigation: Water Management	SIS	SIS	SIS	SIS	SIS	
Industrial	Kraft: Efficient Agitator			Kraft: Efficient Agitator	Kraft: Efficient Agitator		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Kraft: Effluent Treatment System			Kraft: Effluent Treatment System	Kraft: Effluent Treatment System		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Lighting Controls	Lighting Controls	Lighting Controls	Lighting Controls	Lighting Controls	Lighting Controls	
Industrial	Material Handling VFD1, VFD2	Material Handling VFD	Material Handling VFD	Material Handling VFD	Material Handling VFD	Material Handling VFD	
Industrial	Material Handling1, Handling2	Material Handling	Material Handling	Material Handling	Material Handling	Material Handling	
Industrial	Metal: New Arc Furnace	Metal: New Arc Furnace	Metal: New Arc Furnace	Metal: New Arc Furnace	Metal: New Arc Furnace	Metal: New Arc Furnace	
Industrial	Motors: Rewind 101-200 HP	Motors: Rewind 101-200 HP	Motors: Rewind 101-200 HP	Motors: Rewind 101-200 HP	Motors: Rewind 101-200 HP	Motors: Rewind 101-200 HP	
Industrial	Motors: Rewind 201-500 HP	Motors: Rewind 201-500 HP	Motors: Rewind 201-500 HP	Motors: Rewind 201-500 HP	Motors: Rewind 201-500 HP	Motors: Rewind 201-500 HP	
Industrial	Motors: Rewind 20-50 HP	Motors: Rewind 20-50 HP	Motors: Rewind 20-50 HP	Motors: Rewind 20-50 HP	Motors: Rewind 20-50 HP	Motors: Rewind 20-50 HP	
Industrial	Motors: Rewind 501-5000 HP	Motors: Rewind 500+ HP	Motors: Rewind 500+ HP	Motors: Rewind 500+ HP	Motors: Rewind 500+ HP	Motors: Rewind 500+ HP	
Industrial	Motors: Rewind 51-100 HP	Motors: Rewind 51-100 HP	Motors: Rewind 51-100 HP	Motors: Rewind 51-100 HP	Motors: Rewind 51-100 HP	Motors: Rewind 51-100 HP	
Industrial	Panel: Hydraulic Press	Panel: Hydraulic Press	Panel: Hydraulic Press	Panel: Hydraulic Press	Panel: Hydraulic Press	Panel: Hydraulic Press	
Industrial	Paper: Efficient Pulp Screen			Paper: Efficient Pulp Screen	Paper: Efficient Pulp Screen		Measure pertains only to specific industry types and is not applicable in all states.

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Paper: Large Material Handling			Paper: Large Material Handling	Paper: Large Material Handling		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Paper: Material Handling			Paper: Material Handling	Paper: Material Handling		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Paper: Premium Control Large Material			Paper: Premium Control Large Material	Paper: Premium Control Large Material		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Paper: Premium Fan			Paper: Premium Fan	Paper: Premium Fan		Measure pertains only to specific industry types and is not applicable in all states.
Industrial	Plant Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Single measure includes Plant Energy Management, Energy Project Management, Pump Energy Management
Industrial	Pump Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Facility Energy Management	Single measure includes Plant Energy Management, Energy Project Management, Pump Energy Management
Industrial	Pump Equipment Upgrade	Pump Equipment Upgrade	Pump Equipment Upgrade	Pump Equipment Upgrade	Pump Equipment Upgrade	Pump Equipment Upgrade	
Industrial	Pump System Optimization	Pump System Optimization	Pump System Optimization	Pump System Optimization	Pump System Optimization	Pump System Optimization	
Industrial	Replace Streetlight: 100WHPS>LED60W	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Replace Streetlight: 100WHPS>LED78W	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Replace Streetlight: 150HPS>LED111W	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Replace Streetlight: 150HPS>LED117W	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Replace Traffic Light: Green Arrow						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Green Ball 12-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Green Ball 8-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Green Bi-Modal Arrow						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Orange Countdown						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Orange Hand						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Red Arrow						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Replace Traffic Light: Red Ball 12-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Red Ball 8-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: White Walking Person						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Yellow Ball 12-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Yellow Ball 8-inch						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Replace Traffic Light: Yellow Bi-Modal Arrow						Traffic lights were not included in the study. PacifiCorp has achieved high saturation of LED traffic lights and potential was assumed to be minimal.
Industrial	Retro Rural MV>LED117W						PacifiCorp did not allocate measures explicitly for rural applications. Measure covered under the Energy Trust measure of "Retro Streetlight."

Sector	Energy Trust Measure	PacifiCorp Measure Name					Notes
		CA	ID	UT	WA	WY	
Industrial	Retro Streetlight: 100WHPS>LED60W	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Retro Streetlight: 100WHPS>LED78W	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED (78 W) 100 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Retro Streetlight: 150HPS>LED111W	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Retro Streetlight: 150HPS>LED117W	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED (106 W) 150 Watt Equivalent	LED wattages defined by PacifiCorp's program offering.
Industrial	Rural Area Lights						PacifiCorp did not allocate measures explicitly for rural applications. Measure covered under the Energy Trust measure of "Retro Streetlight."
Industrial	Synchronous Belts	Synchronous Belts	Synchronous Belts	Synchronous Belts	Synchronous Belts	Synchronous Belts	
Industrial	Transformers-New, Retrofit	Transformers	Transformers	Transformers	Transformers	Transformers	
Industrial	Wood: Replace Pneumatic Conveyor	Wood: Replace Pneumatic Conveyor	Wood: Replace Pneumatic Conveyor	Wood: Replace Pneumatic Conveyor	Wood: Replace Pneumatic Conveyor	Wood: Replace Pneumatic Conveyor	

APPENDIX C-6. WASHINGTON MEASURES COMPARED TO THE COUNCIL'S 6TH PLAN AND THE REGIONAL TECHNICAL FORUM

In compliance with Chapter 19.285 of the Revised Code of Washington (RCW), Chapter 480-109 of the Washington Administrative Code (WAC), and as described in Volume I of this report, this study employs methodologies consistent with the Northwest Power and Conservation Council's (Council's) 6th Northwest Electric and Conservation Power Plan (6th Plan) to estimate available Class 2 DSM (energy-efficiency) potential. Additionally, Cadmus conducted a thorough review of baseline and measure assumptions used by the Council or by the Regional Technical Forum (RTF); these included costs, savings, applicability, and current saturation. Although this study relies on data specific to PacifiCorp's service territory wherever possible, Council/RTF assumptions were incorporated where appropriate.

Since the completion of the 6th Plan, the RTF has continued to review baseline and measure assumptions. Thus, many of the measures used in the 6th Plan have been updated based on more recent data. Therefore, Cadmus used RTF assumptions where available and 6th Plan assumptions if an RTF update had not been completed as of early July 2012. Comparison to Council/RTF savings assumptions are shown in the following tables.

As part of this multi-state study,[1] measures were mapped, where possible, to RTF and 6th Plan measures. However, not all measure names, measure-efficiency tiers, measure iterations, and measure savings will directly mirror the RTF or 6th Plan. These differences account for changes in federal equipment efficiency standards, the latest version of Washington code(s),[2] and characteristics specific to PacifiCorp's territory, where appropriate. For certain measures, due to the overall complexity of updating the RTF and Council measure savings to current code and standards directly, the measure percent savings were calculated and assumed to be constant. To account for code and standard improvements the equipment consumptions over time were impacted by adjusting the baseline equipment assumptions. This occurred for such measures as "Integrated Building Design," "Low-Flow Showerheads," etc.

Residential Sector

For the residential sector, the Council and RTF use the Simple Energy and Enthalpy Model (SEEM), a building simulation model.[3] Cadmus used SEEM v0.94 to develop estimates of HVAC baseline and measure consumptions (e.g., central air conditioning, heat pumps, and insulation) in single-family, multifamily, and manufactured homes. Model inputs were adjusted for PacifiCorp's territory, thereby customizing parameters such as building square feet and climate zones to match customer-specific data. Thus, the methodology to estimate savings was the same as used by the Council and RTF, but the actual savings differ due to unique

[1] This study covers California, Idaho, Utah, Washington, and Wyoming. Oregon Class 2 DSM potential is assessed in a separate study conducted by the Energy Trust of Oregon.

[2] Washington State Energy Code 2009 Edition was used for this study. The 2012 edition energy code was not enacted at the time the analysis was completed for this study. Other state equipment standards were referenced in this study such as Revised Code of Washington (RCW) for refrigeration equipment minimum efficiency standards.

[3] http://www.nwcouncil.org/energy/rtf/measures/support/SEEM/Default.asp

characteristics of houses within PacifiCorp's service territory compared to Northwest regional averages.[4]

When comparing PacifiCorp measures with the RTF/Council, Cadmus used the most common end-use configuration. For example, there are two categories for PacifiCorp water heating end use is broken into two categories: greater than (GT) 55 gallons and less than or equal to (LE) 55 gallons. Most residential water heaters are less than 55 gallons. Therefore, the Water Heat LE 55 Gallon end use is compared to measure savings with the RTF, as appropriate.

It is also worth noting that one PacifiCorp measure, "Duct Sealing and Insulation – RTF," is incorrectly named and includes only duct insulation savings but not duct sealing savings. RTF measure tables do not include claimed savings for duct insulation; therefore, this PacifiCorp measure is not comparable to the RTF.

The major differences for residential sector are measures developed by SEEM modeling, measures referencing PacifiCorp evaluation results, and updates reflecting recent ENERGY STAR® specifications and/or code and standards. These are key differences in the SEEM modeling.

- PacifiCorp developed SEEM models using version of SEEM v.94, while current RTF workbooks are based on SEEM v.92.
- For most measures, RTF workbooks provide only the savings results without including the input or outputs from SEEM. Because of this, PacifiCorp developed the models independently.
- There are different input assumptions when compared to the RTF, including weather location, building characteristics such as building square footage, equipment efficiencies, and infiltration assumptions. The inputs used are specific to PacifiCorp's territory.

These differences and building assumptions contribute to different savings values for PacifiCorp compared to the RTF. Details for the residential sector are shown in Table C-6.1.

Commercial Sector

For the commercial sector, RTF and Council measure savings were scaled up from a per-measure level to a total building level by applying the number of units specific to each building type. For example, RTF low-flow showerhead savings are presented on a per-showerhead basis, whereas this study calculates average building-level savings by multiplying per-showerhead savings by the number of showers per building (by market segment). RTF and Council measure workbooks may contain multiple savings values based on the capacity, efficiency, fuel type, climate zone, etc. Therefore, weighted averages were used to develop a single savings value that is specific to PacifiCorp's service territory, where possible.

For the commercial lighting measures, the input assumptions were derived from the 2008 Northwest Commercial Building Stock Assessment (CBSA) rather than the 6th Power Plan, where applicable. The 2008 CBSA dataset was used as the 6th Plan assumptions are based on the previous CBSA with the 1995 to 2001 vintage range. Additionally, the lighting technology types

[4] The Northwest region includes Idaho, Oregon, Washington, and Western Montana.

in the 2008 CBSA have greater granularity than the 6th Plan, which allows for additional measure and baseline iterations to compete for potential. The main inputs taken or inferred from the CBSA dataset include the existing lighting power densities (LPD), the saturations of customers above the 2009 WA Code LPD, and wattage distributions by technology type.

In addition, there are some measures that exist in the residential sector but not in the commercial sector. For example, residential-sized clothes washers and dishwashers are applied in commercial buildings, but no RTF workbook exists. In these cases, we used the residential sector workbook and adjusted the number of cycles to reflect how these units are used in commercial buildings. In two cases the Council measures "Covered Parking Lighting" and "Exterior Building Lighting" had incomplete workbooks and therefore had calculated no overall potential. These two measures were not included in the final comparison within this appendix. PacifiCorp's analysis used as much applicable data within Council's workbooks to inform the measure inputs for this study.

The major differences between commercial RTF/Council savings values and those developed for Washington in this assessment are driven by the use of PacifiCorp evaluation results, Washington building codes and/or efficiency standards, updates reflecting recent changes in ENERGY STAR specifications, and current Northwest data (such as CBSA). See Table C-6.2 for a measure-level comparison of savings values and explanations of key drivers of differences, where present.

Industrial, Irrigation, Agriculture, and Street Lighting Sectors

For the industrial sector, the end use savings assumptions relied heavily on the Council's industrial analysis in the 6th Plan. Updates were made based on recent energy savings assumptions from the U.S. Department of Energy's (DOE) Industrial Assessment Center (IAC) Database, Northwest Energy Efficiency Alliance (NEEA) 2011 Market Progress Evaluation Report, PacifiCorp's Market Characterization studies (2011 and 2012), and other industrial sources. Primary differences in industrial savings between this study and the region are driven by PacifiCorp specific mix of facility types.

In the agriculture sector, neither the Council nor the RTF include a majority of the measures analyzed in this assessment. Only three measures could be compared directly: "VFDs - Potato / Onion Shed," "High-efficiency Livestock Waterers," and "VFDs for Dairy Vacuum Pumps."

In the irrigation sector, there was variation in how measures were grouped and analyzed by the Council or the RTF.[5] However, savings from these measures can be broadly classified as resulting from 1) reduced water flow (i.e., repair leaks and replace worn nozzles, 2) improved plant efficiency (i.e., better motors, pumps, speed control, distribution system improvements), and 3) improved system scheduling (i.e., scientific irrigation scheduling – SIS). There is also significant variation in how these measures interact with each other. For these reasons, this study grouped the savings opportunities into one aggregate measure that incorporates the three types of savings described above. The PacifiCorp savings is an average of savings across these measure technologies based on PacifiCorp's Market Characterization Study.

[5] The irrigation measure comparison was not included in the C-6 industrial appendix document and only mentioned here. The PacifiCorp "Irrigation System Improvements" measure was comparable to the RTF workbook called "AgIrrigationHardware_v2_2".

The industrial comparison table, excluding street lighting, is shown in Table C-6.3.

The street lighting sector relied on PacifiCorp's current equipment inventory, replacement options and turnover rates, equipment costs and operational and maintenance saving. Measure and baseline efficiencies are territory-specific based on PacifiCorp's data and differ from Council assumptions in some cases (see Table C-6.4). In addition, the Council assumes slightly lower annual operating hours for street lighting compared to PacifiCorp data.

Table C-6.1. Residential Measure-Level Comparison

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Ceiling Insulation (WA) - Above Code	R-49 (Above WA Code - Multi Family Homes Only)	R-38 (WA Code - Multi Family Homes Only)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.02	0.06	Per Sqft of Ceiling Insulation	Differences in multifamily building characteristics such as building square footage, ceiling square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	0.40	0.44	Per Sqft of Ceiling Insulation	RTF measure is R-0 to R-30. RTF savings for R-19 to R-30 is 0.18 kWh per Sqft. RTF has no comparable measure iteration with R-11 to R-49 similar to PacifiCorp. PacifiCorp existing conditions are based on PacifiCorp's Residential Energy Decision Survey.
Ceiling Insulation (WA) - Code	R-38 (WA Code - Multi Family Homes Only)	R-11 (Existing Insulation)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.22	0.27	Per Sqft of Ceiling Insulation	Based on existing R-value while RTF baseline is R-19. PacifiCorp existing conditions are based on PacifiCorp's Residential Energy Decision Survey. Differences in multifamily building characteristics such as building square footage, ceiling square footage, equipment efficiencies, and infiltration assumptions impact the savings. Model used Yakima weather for PacifiCorp territory in Washington.
Ceiling Insulation (WA) - Code	R-49 (WA Code - Single Family and Manufactured Homes Only)	R-11 (Existing Insulation)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	0.26	0.43	Per Sqft of Ceiling Insulation	Based on existing R-value while RTF baseline is R-19. PacifiCorp existing conditions are based on PacifiCorp's Residential Energy Decision Survey. Differences in single family building characteristics such as building square footage, ceiling square footage, equipment efficiencies, and infiltration assumptions impact the savings. Model used Yakima weather for PacifiCorp territory in Washington.
Clothes Washer - RTF Tier 1	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Single Family	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	74.88	76.00	Per Clothes Washer	RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ES specifications. Savings calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer".
Clothes Washer - RTF Tier 2	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Single Family	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	111.67	133.00	Per Clothes Washer	RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ES specifications. Savings calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer".

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer - RTF Tier 3	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Single Family	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	140.08	203.00	Per Clothes Washer	RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ES specifications. Savings calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer".
Computer - ENERGY STAR	ENERGY STAR Computer	Standard Computer	All	Computer	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	76.64	130 - 205	Per Computer	Updated analysis to use more current ENERGY STAR assumptions
Conversion Electric Furnace to ASHP - Air Source Heat Pump - SEER 15/HSPF 8.5 (Split System)	Air Source Heat Pump - SEER 15/HSPF 8.5 (Split System)	Standard Electric Furnace	Manufactured	Heat Central	RTF	ResMHHPConversion_v2_4	7,307.08	3,971.00	Per Heat Pump	Heat pump conversion efficiencies were greater than the RTF's. PacifiCorp assumed high efficiency heat pump (SEER 15/HSPF 8.5) vs. standard efficiency heat pump used by the RTF (SEER 13/HSPF 7.7). Also there were differences in manufactured home characteristics such as building square footage and infiltration assumptions. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Conversion Electric Furnace to ASHP - Air Source Heat Pump - SEER 15/HSPF 8.5 (Split System)	Air Source Heat Pump - SEER 15/HSPF 8.5 (Split System)	Standard Electric Furnace	Single Family	Heat Central	RTF	Res_SFHeatPumpsFY10v2_4	9,010.24	4,154.00	Per Heat Pump	Heat pump conversion efficiencies were greater than the RTF's. PacifiCorp assumed high efficiency heat pump (SEER 15/HSPF 8.5) vs. standard efficiency heat pump used by the RTF (SEER 13/HSPF 7.7). Also there were differences in manufactured home characteristics such as building square footage and infiltration assumptions. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Cooking Oven - High Efficiency	High Efficiency Convection Cooking Oven	Federal Standard 2012 Cooking Oven	Single Family	Cooking Oven	6th PP	ResOven_MicrowaveFY09v1_0	2.72	64.00	Per Oven	6th PP does not consider the 2012 updates to federal standards
Dishwasher - RTF ENERGY STAR	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Single Family	Water Heat Le 55 Gal	RTF	ResDishwasher_FY10v2_1	32.98	10.20	Per Dishwasher	RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ES specifications. Savings calculated using PacifiCorp evaluation results. The RTF savings reflected in this comparison are from the category "CEE Tier 1 Dishwasher - Electric DHW". This tier reflects the old ENERGY STAR/CEE Tier 1 specifications. ENERGY STAR/CEE Tier 1 specifications are now equal to the previous CEE Tier 2 specifications and the Cadmus savings reflected in this comparison are from the "CEE Tier 2 Dishwasher - Electric DHW" category.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher - RTF Enhanced Efficiency	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Single Family	Water Heat Le 55 Gal	RTF	ResDishwasher_FY10v2_1	57.71	63.30	Per Dishwasher	RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. ENERGY STAR/CEE Tier 1 specifications are now equal to the previous CEE Tier 2 specifications. The RTF CEE Tier 2 category is now used for the PacifiCorp ENERGY STAR measure and a CEE Tier 2 specification no longer exists. This measure corresponds to the RTF category "189 to 277 kWh/year - Energy Star Top 10% - Electric DHW". Savings calculated using PacifiCorp evaluation results.
Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Multifamily	Water Heat Le 55 Gal	6th PP	ResDHWHeatRecoveryFY09v1_1	266.67	373.00	Per Building	6th PP assumes the same savings for both multifamily and single family. Updated analysis to vary by building type.
Drain Water Heat Recovery (GFX)	Gravity Film Heat Exchanger	No Heat Exchanger	Single Family	Water Heat Le 55 Gal	6th PP	ResDHWHeatRecoveryFY09v1_1	366.29	373.00	Per Building	6th PP assumes the same savings for both multifamily and single family. Updated analysis to vary by building type.
Dryer - High Efficiency	High Efficiency Dryer with Controls and Moisture Sensor - CEF/EF 3.14/3.19	Federal Standard 1994 Dryer - CEF/EF 2.97/3.01	Single Family	Dryer	6th PP	EStarWasher_DryerSingleFamily_FY09v1_1	54.44	23.00	Per Dryer	Dryers are not included in PacifiCorp program offerings. Dryer savings were revised based on from recent data from the 2009 and 2010 evaluation for clothes washers regarding number of cycles.
Duct System Efficiency Upgrade - Ducts Inside	Inside Duct Design	Standard Duct Design	Single Family	Heat Pump	RTF	PTCSDuctsInsideFY10v1_1	140.72	1,053.00	Per Building	PacifiCorp measure did not vary supply and return duct areas from pre- to post- conditions. PacifiCorp measure is based on change in duct location. The RTF did vary duct areas from pre- to post- conditions. Other differences in building characteristics such as building square footage, equipment efficiencies, duct leakage and infiltration assumptions impact savings. In addition, PacifiCorp savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Ductless Heat Pump (DHP)	Ductless Heat Pump (Cool) - SEER/EER 18/12.5, HSPF 10.0	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Single Family	Room Heat	RTF	DHP_Provisional_Existing_FY10v1_2	3,934.48	3,500.00	Per Building	RTF savings has been adjusted based on PacifiCorp specific home characteristics and location
Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.02	0.04	Per Sqft of Floor Insulation	Differences in building characteristics such as building square footage, floor square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Floor Insulation (WA) - Above Code	R-38 (Above WA Code)	R-30 (WA Code)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	0.02	0.05	Per Sqft of Floor Insulation	Differences in building characteristics such as building square footage, floor square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	0.62	0.55	Per Sqft of Floor Insulation	Differences in building characteristics such as building square footage, floor square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.58	0.44	Per Sqft of Floor Insulation	Differences in building characteristics such as building square footage, floor square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Floor Insulation (WA) - Code	R-30 (WA Code)	R-0 (Existing Insulation)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	0.51	0.61	Per Sqft of Floor Insulation	Differences in building characteristics such as building square footage, floor square footage, equipment efficiencies, and infiltration assumptions impact savings. In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Freezer - Removal	Freezer - Removal of Stand-Alone	Proper Disposal of Freezer	Single Family	Freezer	RTF	FrigRecycle_FY10v2_3	542.40	555.30	Per Freezer Recycled	Updated the RTF data with PacifiCorp 2009-2010 evaluation data, while keeping the RTF methodology. RTF workbook v2.3 was used instead of v2.4, there is no difference in savings or the analysis only v2.4 includes a summary tab.
Freezer - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Single Family	Freezer	RTF	ResFreezer_v2_1	45.83	36-55	Per Residential Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Single Family	Freezer	RTF	ResFreezer_v2_1	84.63	75-94	Per Residential Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Single Family	Freezer	RTF	ResFreezer_v2_1	114.05	114.05	Per Residential Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations.
Heat Pump - Air Source RTF Tier 2	RTF Tier 2 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.5 (Split System) (Manufactured Homes Only)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Manufactured	Heat Pump	RTF	ResMHHPUpgrades_v2_4	604.34	293.00	Per Heat Pump	Differences in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Heat Pump - Air Source Enhanced	Enhanced Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	CEE Tier 2 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Single Family	Heat Pump	RTF	Res_SFHeatPumpsFY10v2.7	363.76	169.00	Per Heat Pump	PacifiCorp baseline name updated to reflect the most comparable measure iteration to the RTF. PacifiCorp savings based on single family going from 15/8.5 SEER/HSPF to 16/9.0 SEER/HSPF while the RTF goes from 13/8.5 SEER/HSPF to 14/9.0 SEER/HSPF. Differences in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Heat Pump - Ground Source	ENERGY STAR Ground Source Heat Pump - EER 17.1 and 3.6 COP (Split System)	Federal Standard 2006 Air Source Heat Pump - SEER/EER 13/11 and HSPF 7.7 (Split System)	Single Family	Heat Pump	RTF	ResGSHP_v2_1	1,365.27	1,153.00	Per Heat Pump	Differences in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater > 55 GAL - EF 2.05	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Single Family	Water Heat GT 55 Gal	RTF	Res_HPWH_v1_2	1,678.88	860-2,081	Per Water Heater	RTF savings depends on home heating type and location. RTF sizing has two ranges: 50-75 gal and greater than 75 gallons. These sizes do not fit the assumed size division for PacifiCorp that is based on the federal standard division of size. Savings calculated using RTF assumptions and methodology.
Heat Pump Water Heater - RTF Tier 1	RTF Tier 1 Heat Pump Water Heater ≤ 55 GAL - EF 1.43	Federal Standard 2004 Storage Water Heater ≤ 55 GAL - EF 0.92	Single Family	Water Heat LE 55 Gal	RTF	Res_HPWH_v1_2	990.35	860-1,479	Per Water Heater	RTF savings depends on home heating type and location. RTF sizing ranges from 50 to 75 gallons is used to compare to PacifiCorp savings for sizes less than 55 gallons based on the federal standard division of size. Savings calculated using RTF assumptions and methodology and an average of heating types.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater > 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater > 55 GAL - EF 0.87	Single Family	Water Heat GT 55 Gal	RTF	Res_HPWH_v1_2	1,709.77	,762-2,009	Per Water Heater	RTF savings depends on home heating type and location. RTF sizing has two ranges: 50-75 gal and greater than 75 gallons. These sizes do not fit the assumed size division for PacifiCorp that is based on the federal standard division of size. Savings calculated using RTF assumptions and methodology.
Heat Pump Water Heater - RTF Tier 2	RTF Tier 2 Heat Pump Water Heater ≤ 55 GAL - EF 2.08	Federal Standard 2004 Storage Water Heater ≤ 55 GAL - EF 0.92	Single Family	Water Heat LE 55 Gal	RTF	Res_HPWH_v1_2	1,543.90	,762-1,824	Per Water Heater	RTF savings depends on home heating type and location. RTF sizing ranges from 50 to 75 gallons is used to compare to PacifiCorp savings for sizes less than 55 gallons based on the federal standard division of size. Savings calculated using RTF assumptions and methodology and an average of heating types.
Lighting General Service Lamp - High Efficiency CFL	High Efficiency General Service Lamp --CFL	Standard General Service Lamp - Incandescent	Single Family	Lighting Standard	RTF	ResCFLLighting_v2.1	26.69	23.36	Per Lamp	RTF analysis (direct install) includes factors such as 4% removal rate that are not included in potential study. WHF has been adjusted to Yakima, WA.
Lighting Specialty Lamp - High Efficiency CFL	High Efficiency Specialty Lamp -CFL	Standard Specialty Lamp - Incandescent	Single Family	Lighting Interior Specialty	RTF	ResSpecialtyLighting_v1.2	25.96	23.00	Per Lamp	RTF analysis (direct install) includes factors such as 4% removal rate that are not included in potential study. WHF has been adjusted to Yakima, WA.
Low-Flow Showerhead - RTF Tier 1	RTF Tier 1 Low-Flow Showerhead - 2.0 GPM (In Situ - 1.8 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Single Family	Water Heat Le 55 Gal	RTF	ResShowerheads_v2.1	139.56	139.00	Per Showerhead	The RTF value given corresponds to the category "Any Showerhead".
Low-Flow Showerhead - RTF Tier 2	RTF Tier 2 Low-Flow Showerhead - 1.75 GPM (In Situ - 1.58 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Single Family	Water Heat Le 55 Gal	RTF	ResShowerheads_v2.1	222.79	222.00	Per Showerhead	The RTF value given corresponds to the category "Any Showerhead".
Low-Flow Showerhead - RTF Tier 3	RTF Tier 3 Low-Flow Showerhead - 1.5 GPM (In Situ - 1.35 GPM)	RTF Federal Standard 1994 Showerhead - 2.5 GPM (In Situ - 2.2 GPM)	Single Family	Water Heat Le 55 Gal	RTF	ResShowerheads_v2.1	309.43	307.00	Per Showerhead	The RTF value given corresponds to the category "Any Showerhead".
Microwave - High Efficiency	High Efficiency Microwave	Standard Microwave	Single Family	Microwave	6th PP	ResOven_MicrowaveFY09v1_0	26.99	10.00	Per Microwave	Updated 6th PP methodology using more recent DOE data
Monitor - ENERGY STAR	ENERGY STAR Monitor	Standard Monitor	Single Family	Monitor	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	14.19	33 - 55	Per Monitor	Updated analysis to use more current ENERGY STAR assumptions

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Manufactured	Heat Pump	RTF	ResMHPTCSCommissioningControlsSizing_v2_4	118.57	836.31	Per Heat Pump	The RTF includes duct improvement as part of PTCS protocol. Duct improvement are considered as an individual measure in this potential study, therefore to avoid double counting this improvement is not included in this measure for PacifiCorp. In addition, the RTF has recently recommended that "*this measure category should be classified under review in order to implement new ventilation and infiltration inputs using the updated SEEM (v0.94) module. This will require new simulation inputs to be developed and run in the updated SEEM program. There will be at least 150 new SEEM runs (5 control strategies x 2 HVAC equipment types ("Lo" and "Hi") x 3 prototype houses x 5 weather zones) but the update will not involve any new primary data collection. It will, however, require a change in the method in how the current SEEM outputs are chosen and used to form the UES. Once the recommended updates to the UES values have been implemented, it can be returned to the classification active*." Other differences are in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Quality Installation - Heat Pump	Quality Installation of Heat Pump - Commissioning, Controls, and Proper Sizing	Standard Installation of Heat Pump	Single Family	Heat Pump	RTF	Res_SFHeatPumpsFY10v2_4	144.11	1,152.00	Per Heat Pump	The RTF includes duct improvement as part of PTCS protocol. Duct improvement are considered as an individual measure in this potential study, therefore to avoid double counting this improvement is not included in this measure for PacifiCorp. In addition, the RTF has recently recommended that "*this measure category should be classified under review in order to implement new ventilation and infiltration inputs using the updated SEEM (v0.94) module. This will require new simulation inputs to be developed and run in the updated SEEM program. There will be at least 150 new SEEM runs (5 control strategies x 2 HVAC equipment types ("Lo" and "Hi") x 3 prototype houses x 5 weather zones) but the update will not involve any new primary data collection. It will, however, require a change in the method in how the current SEEM outputs are chosen and used to form the UES. Once the recommended updates to the UES values have been implemented, it can be returned to the classification active*." Other differences are in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Refrigerator - Removal	Refrigerator - Removal of Secondary	Proper Disposal of Refrigerator	Single Family	Refrigerator	RTF	FrigRecycle_FY10v2_3	724.00	481.68	Per Refrigerator Recycled	Updated the RTF data with PacifiCorp 2009-2010 evaluation data, while keeping the RTF methodology. RTF workbook v2.3 was used instead of v2.4, there is no difference in savings or the analysis only v2.4 includes a summary tab.
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Single Family	Refrigerator	RTF	ResRefrigerators_v2_1	37.07	37.07	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations for CEE Tier 1 refrigerators.
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Single Family	Refrigerator	RTF	ResRefrigerators_v2_1	65.41	65.41	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations for CEE Tier 2 refrigerators.
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Single Family	Refrigerator	RTF	ResRefrigerators_v2_1	85.78	85.78	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations for CEE Tier 3 refrigerators.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Room AC - ENERGY STAR	ENERGY STAR Room AC - CEER/EER 10.7/10.8 (8,000-13,999 Btuh)	Federal Standard 2001 Room AC - CEER/EER 9.7/9.8 (8,000-13,999 Btuh)	Single Family	Cool Room	6th PP	EStarRoomACFY09v1_0	34.89	36.25	Per 12,000 BTU Room AC Unit	Measure was deactivated in May 2012 by the RTF.
Set Top Box - ENERGY STAR	ENERGY STAR Set Top Box	Standard Set Top Box	Single Family	Set Top Box	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	201.08	88 - 223	Per Set Top Box	6th PP has a range of savings based on category
Slab Insulation - Above Code	R-15 (Above Code)	R-10 (Code)	Single Family	Heat Pump	RTF	FullSlabR10_FY10v1_2	11.69	811.00	Per Building	RTF modeled zone 3 savings for Montana only. Baseline assumptions were specific to Montana; slab insulation R-0; slab perimeter insulation R-13. PacifiCorp baseline were based on WA code; slab insulation R-10. Other differences include building characteristics such as building square footage, insulated slab square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Thermal Shell - Infiltration Reduction	0.2 ACH with Heat Recovery Ventilator (HRV)	Standard New Construction Homes 0.35 ACH	Single Family	Heat Pump	6th PP	ResNewSF_wAdvancedLightingsqftFY09v1_2	0.42	0.76	Per Building Sqft	Differences in methodology; PacifiCorp savings based on SEEM modeling and the 6th PP is based on an UA analysis.
TV - ENERGY STAR	ENERGY STAR TV	Standard TV	Single Family	TV	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	130.84	113 - 295	Per TV	6th PP has a range of savings based on category
Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	1.06	0.62	Per Sqft of Wall Insulation	RTF measure is R-0 to R-11. Differences in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable)
Wall Insulation 2x4 (WA) - Below Code	R-13 (Below WA Code - Maximum Insulation Feasible)	R-0 (Existing Insulation)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	1.13	0.90	Per Sqft of Wall Insulation	RTF measure is R-0 to R-11. Differences in building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable)

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	3.75	10.08	Per Window Sqft	RTF measure is from single pane to Class 30. The RTF workbooks do not specify the single pane U-value used in the SEEM models. The PacifiCorp measure is from 0.85 to 0.32 U-value. The PacifiCorp baseline U-value assumed for single pane is 0.85 and is within the range of ASHAE Handbook 2009 Fundaments where single pane glazings U-values range from 0.74 to 1.23. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	4.13	11.51	Per Window Sqft	RTF measure is from single pane to Class 30. The RTF workbooks do not specify the single pane U-value used in the SEEM models. The PacifiCorp measure is from 0.85 to 0.32 U-value. The PacifiCorp baseline U-value assumed for single pane is 0.85 and is within the range of ASHAE Handbook 2009 Fundaments where single pane glazings U-values range from 0.74 to 1.23. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.
Window (WA) - Code	U-value 0.32 Window (WA Code)	Existing Window - Single Pane	Single Family	Heat Pump	RTF	ResSFWx_v2_4	4.37	13.53	Per Window Sqft	RTF measure is from single pane to Class 30. The RTF workbooks do not specify the single pane U-value used in the SEEM models. The PacifiCorp measure is from 0.85 to 0.32 U-value. The PacifiCorp baseline U-value assumed for single pane is 0.85 and is within the range of ASHAE Handbook 2009 Fundaments where single pane glazings U-values range from 0.74 to 1.23. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp territory.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	0.16	0.58	Per Window Sqft	RTF measure is Class 35 to Class 30. PacifiCorp measure is from U-value of 0.32 to U-value of 0.30. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.18	0.63	Per Window Sqft	RTF measure is Class 35 to Class 30. PacifiCorp measure is from U-value of 0.32 to U-value of 0.30. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 1 Above Code	U-value 0.30 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	0.20	0.77	Per Window Sqft	RTF measure is Class 35 to Class 30. PacifiCorp measure is from U-value of 0.32 to U-value of 0.30. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	0.56	1.47	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.25. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.63	1.58	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.25. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per	RTF/6th Plan Savings	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Window (WA) - Tier 2 Above Code	U-value 0.25 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	0.68	1.92	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.25. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Manufactured	Heat Pump	RTF	ResMHWx_v3_1	0.82	1.47	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.22. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Multifamily	Heat Pump	RTF	ResWXMF_v2_2	0.92	1.58	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.22. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp
Window (WA) - Tier 3 Above Code	U-value 0.22 Window (Above WA Code)	U-value 0.32 Window (WA Code)	Single Family	Heat Pump	RTF	ResSFWx_v2_4	1.01	1.92	Per Window Sqft	RTF measure is Class 35 to Class 22. PacifiCorp measure is from U-value of 0.32 to U-value of 0.22. Other differences include building characteristics such as building square footage, location, and envelope assumptions (specific to PacifiCorp based on Energy Decision Surveys where applicable). In addition, savings modeled using SEEM v94 instead of RTF's SEEM v92. Model used Yakima weather for PacifiCorp

Table C-6.2. Commercial Measure-Level Comparison

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	978	978	Per Anti-Sweat Control	Values represent low temp anti-sweat heat control and not an average of Low and Med Temp
Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	978	978	Per Anti-Sweat Control	Values represent low temp anti-sweat heat control and not an average of Low and Med Temp
Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	978	978	Per Anti-Sweat Control	Values represent low temp anti-sweat heat control and not an average of Low and Med Temp
Anti-Sweat (Humidistat) Controls	Anti-Sweat (Humidistat) Controls	No Anti-Sweat (Humidistat) Controls	School	Refrigeration	6th PP	PC-Grocery-6P-D3	978	978	Per Anti-Sweat Control	Values represent low temp anti-sweat heat control and not an average of Low and Med Temp

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	1,430	977	Per Low Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have a savings of 977 kWh and 83 kWh, respectively. Additionally, the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm".

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	1,430	977	Per Low Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Miscellaneous	Refrigeration	6th PP	PC-Grocery-6P-D3	1,430	977	Per Low Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Low Temp	Case Replacement Low Temp	No replacement	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	1,430	977	Per Low Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Low Temp	Case Replacement Low Temp	No replacement	School	Refrigeration	6th PP	PC-Grocery-6P-D3	1,430	977	Per Low Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	536	83	Per Med Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	536	83	Per Med Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Miscellaneous	Refrigeration	6th PP	PC-Grocery-6P-D3	536	83	Per Med Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Med Temp	Case Replacement Med Temp	No replacement	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	536	83	Per Med Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Case Replacement Med Temp	Case Replacement Med Temp	No replacement	School	Refrigeration	6th PP	PC-Grocery-6P-D3	536	83	Per Med Temp Case Replacement	The Sixth Power Plan measures 'Case Replacement Low Temp' and 'Case Replacement Med Temp' have savings of 977 kWh and 83 kWh, respectively. Additionally the Sixth Power Plan measure has the measure 'Case Electronically Commutated Motor' with a savings of 1,018 kWh. Because the savings are greater for an ECM upgrade than a case replacement, it was assumed that the Sixth Power Plan case replacement measures do not include an ECM upgrade. The RTF has evaluated ECM case fans upgrades but not entire case replacements since the publication of the Sixth Plan. This PacifiCorp case replacement measure includes an ECM and therefore the savings include the RTF ECM savings (452.7 kWh) . The costs were also adjusted to account for the additional ECM costs ($110). This data is from the RTF measure "Grocery - ECMs for Display Cases" and workbook "ComGroceryDisplayCaseECMs_v2_1.xlsm"

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Health	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	64	72	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Lodging	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	64	72	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Miscellaneous	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	64	72	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	School	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	64	72	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 1 Clothes Washer - MEF 2.05 and WF 4.97 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Small Retail	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	64	72	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.00 to 2.19 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Health	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	96	108	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Lodging	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	96	108	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Miscellaneous	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	96	108	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	School	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	96	108	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 2 Clothes Washer - MEF 2.28 and WF 4.14 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Small Retail	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	96	108	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.20 to 2.45 Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Health	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	120	135	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Lodging	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	120	135	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Miscellaneous	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	120	135	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	School	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	120	135	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Clothes Washer Residential	RTF Tier 3 Clothes Washer - MEF 2.66 and WF 3.52 (Electric DHW & Dryer)	RTF Market Standard 2011 Clothes Washer- MEF 1.94 and WF 7.0 (Electric DHW & Dryer)	Small Retail	Water Heat Le 55 Gal	RTF	ResClothesWashersSF_v2_1	120	135	Per Residential Clothes Washer	Updated Number of Cycles from 352 to 312 based on the ENERGY STAR Calculator. RTF workbook v2.1 did not include ENERGY STAR 2012 specification updates. Cadmus made adjustments to MEF ranges to reflect 2012 ENERGY STAR specifications and savings were calculated using PacifiCorp evaluation results. RTF savings are from the category "MEF 2.46 or higher Clothes Washer - Electric DHW, Electric Dryer". The potential for clothes washers goes to the non-6th Power Plan measure 'Clothes Washer Commercial' due to competition and the fact that the commercial clothes washers have a lower levelized cost.
Combination Oven	60% cooking efficiency	Non ENERGY STAR	Grocery	Cooking	RTF	CombiOvensFY10v1_1	11,757	11,757	Per Combination Oven	
Combination Oven	60% cooking efficiency	Non ENERGY STAR	Health	Cooking	RTF	CombiOvensFY10v1_1	11,757	11,757	Per Combination Oven	
Combination Oven	60% cooking efficiency	Non ENERGY STAR	Lodging	Cooking	RTF	CombiOvensFY10v1_1	11,757	11,757	Per Combination Oven	
Combination Oven	60% cooking efficiency	Non ENERGY STAR	Restaurant	Cooking	RTF	CombiOvensFY10v1_1	11,757	11,757	Per Combination Oven	
Combination Oven	60% cooking efficiency	Non ENERGY STAR	School	Cooking	RTF	CombiOvensFY10v1_1	11,757	11,757	Per Combination Oven	
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Grocery	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Health	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Lodging	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Miscellaneous	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	Restaurant	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Semivertical - No Doors - Med Temp	Commercial Refrigerator - Semivertical - No Doors - Med Temp	Standard Case	School	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	170	170	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Grocery	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Health	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Lodging	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Miscellaneous	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	Restaurant	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	
Commercial Refrigerator - Vertical - No Doors - Med Temp	Commercial Refrigerator - Vertical - No Doors - Med Temp	Standard Case	School	Refrigeration	6th PP	PC-Pack Refrig Equip-6P-D3	231	231	Per Linear Foot of Refrigerated Open Case	
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Grocery	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Health	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Large Office	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Large Retail	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Lodging	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Miscellaneous	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Restaurant	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	School	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Small Office	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Small Retail	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.
Computer ENERGY STAR	ENERGY STAR Computer	Standard non-ENERGY STAR Computer	Warehouse	Computers	6th PP	PNWConsumerElectronicsSupplyCurve_6thPlanv1_7	105	177	Per Computer	Measure consumption is based on the 2011 ENERGY STAR calculator for office equipment, assuming a equal split of residential and commercial units. The ENERGY STAR power consumptions are the same between residential and commercial, but vary in the amount of time turned off and in sleep mode. The Sixth Plan looks at the four computer categories (A, B, C, and D) and calculates a weighted average based on market sales data. The Sixth Power plan measure consumptions no longer meet the current ENERGY STAR Version 5.0 Energy Efficiency Requirements for computers, which became effective July 1, 2009.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - CO2 Scrub	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - CO2 Scrub	No Retrofit	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	15%	11%	Unit Percent Savings	The 6th Power Plan percent savings values represent the refrigeration end use percent savings and this value does not include measure applicability, penetration rate, or inventory factor. The PacifiCorp percent savings similarly reflects the refrigeration end use percent savings while not including the applicability restraints. The PacifiCorp percent savings are based on recent market data from the NEEA Report: Emerging Technologies and Behaviors for Energy Efficient Industrial Refrigeration , May 12 2011.
Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - Membrane	Controlled Atmosphere - Fruit Storage - Controlled Atmosphere Retrofit - Membrane	No Retrofit	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	3%	6%	Unit Percent Savings	The 6th Power Plan percent savings values represent the refrigeration end use percent savings and this value does not include measure applicability, penetration rate, or inventory factor. The PacifiCorp percent savings similarly reflects the refrigeration end use percent savings while not including the applicability restraints. The PacifiCorp percent savings are based on recent market data from the NEEA Report: Emerging Technologies and Behaviors for Energy Efficient Industrial Refrigeration , May 12 2011.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Retrofit	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Retrofit	No Retrofit	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	44%	61%	Unit Percent Savings	The 6th Power Plan percent savings values represent the refrigeration end use percent savings and this value does not include measure applicability, penetration rate, or inventory factor. The PacifiCorp percent savings similarly reflects the refrigeration end use percent savings while not including the applicability restraints. The PacifiCorp percent savings are based on recent market data from the NEEA Report: Emerging Technologies and Behaviors for Energy Efficient Industrial Refrigeration , May 12 2011.
Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Tuneup	Controlled Atmosphere - Fruit Storage - Fruit Storage Refrigeration Tuneup	No Tuneup	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	8%	10%	Unit Percent Savings	The 6th Power Plan percent savings values represent the refrigeration end use percent savings and this value does not include measure applicability, penetration rate, or inventory factor. The PacifiCorp percent savings similarly reflects the refrigeration end use percent savings while not including the applicability restraints. The PacifiCorp percent savings are based on recent market data from the NEEA Report: Emerging Technologies and Behaviors for Energy Efficient Industrial Refrigeration , May 12 2011.
Controlled Atmosphere - Fruit Storage - HighBay Lighting Upgrade Package	Controlled Atmosphere - Fruit Storage - HighBay Lighting Upgrade Package	No Upgrade	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	8%	3%	Unit Percent Savings	This measure represents energy saving lighting improvements, the percent savings represents the total reduction in kWh compared to the refrigeration end use.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Controlled Atmosphere - Fruit Storage - Lighting Controls	Controlled Atmosphere - Fruit Storage - Lighting Controls	No Controls	Warehouse Controlled Atmosphere	Refrigeration	6th PP	PC-Industrial-D12 with Industrial_tool_111209	4%	1%	Unit Percent Savings	This measure represents energy saving lighting improvements, the percent savings represents the total reduction in kWh compared to the refrigeration end use.
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Grocery	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Health	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Large Retail	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Lodging	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Miscellaneous	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	Restaurant	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325
Cooking Hood Controls	Demand-Ventilation Control	No Controls	School	Ventilation And Circulation	6th PP	PC-DCVHood-6P-D1	1,865	1,865	Per Cooking Hood Control	Savings represent a 1hp DCV hood. HP Motor ranges from 0.5 to 5 HP with savings ranging 933 to 9325

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Grocery	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Health	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Large Office	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Large Retail	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Lodging	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Miscellaneous	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Restaurant	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	School	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Small Office	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Small Retail	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF ENERGY STAR Dishwasher - 277 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Warehouse	Water Heat	RTF	ResDishwasher_FY10v2_0	35	37	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Grocery	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Health	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Large Office	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Large Retail	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Lodging	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Miscellaneous	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Restaurant	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	School	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Small Office	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Small Retail	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwasher Residential	RTF Enhanced Efficiency Dishwasher - 250 kWh/yr and 4.25 gal/cycle	RTF Market Standard 2010 Dishwasher - 313 kWh/yr and 4.76 gal/cycle	Warehouse	Water Heat	RTF	ResDishwasher_FY10v2_0	61	63	Per Residential Dishwasher	Updated Number of Cycles from 215 to 208 based on the ENERGY STAR Calculator; In addition codes and standards were updated for residential dishwasher. The kWh measure definition is the maximum consumption for that dishwasher tier. Therefore the actual consumption used to calculated savings represents the range of units within that tier.
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Grocery	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Health	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Large Retail	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Lodging	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Miscellaneous	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Restaurant	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - High Temp	High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	School	Water Heat	RTF	ComDishwasher FY10v1_1	4,038	4,038	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Grocery	Water Heat	RTF	ComDishwasher FY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Health	Water Heat	RTF	ComDishwasher FY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Large Retail	Water Heat	RTF	ComDishwasher FY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Lodging	Water Heat	RTF	ComDishwasher FY10v1_1	3,703	3,703	Per Commercial Dishwasher	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Miscellaneous	Water Heat	RTF	ComDishwasherFY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Restaurant	Water Heat	RTF	ComDishwasherFY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Dishwashing - Commercial - Low Temp	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	School	Water Heat	RTF	ComDishwasherFY10v1_1	3,703	3,703	Per Commercial Dishwasher	
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Grocery	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Health	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Large Retail	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Miscellaneous	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Restaurant	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	School	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Small Retail	Lighting Interior Fluorescent	RTF	ComGroceryDisplayCaseLEDs_v2_1	106	59 to 154	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Grocery	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Health	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Large Retail	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Miscellaneous	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Restaurant	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	School	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs	Display Case LEDs	Standard Case Lighting	Small Retail	Lighting Interior Other	RTF	ComGroceryDisplayCaseLEDs_v2_1	82	59 to 104	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Grocery	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Health	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Large Retail	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Miscellaneous	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Restaurant	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	School	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Small Retail	Lighting Interior Fluorescent	RTF	GroceryOpenDisplayCaseLEDs_v1	79	38 to 133	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps and across T12 and T8 baseline cases. Represents an existing construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Grocery	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Health	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Large Retail	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Miscellaneous	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Restaurant	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	School	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case LEDs (Open Cases)	Display Case LEDs (Open Cases)	Standard Case Lighting	Small Retail	Lighting Interior Other	RTF	GroceryOpenDisplayCaseLEDs_v1	45	28 to 62	Per Linear Foot of Refrigerated Open Case	Value represents the average of the High and Low Power LED lamps. Represents a new construction display case.
Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Grocery	Refrigeration	RTF	ComGroceryDisplayCaseLEDs_v2_1	20	14 to 27	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents an existing construction display case.
Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Health	Refrigeration	RTF	ComGroceryDisplayCaseLEDs_v2_1	20	14 to 27	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents an existing construction display case.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Miscellaneous	Refrigeration	RTF	ComGroceryDisplayCaseLEDs_v2_1	20	14 to 27	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents an existing construction display case.
Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	Restaurant	Refrigeration	RTF	ComGroceryDisplayCaseLEDs_v2_1	20	14 to 27	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents an existing construction display case.
Display Case Motion Sensors	Display Case Motion Sensors	No Motion Sensors	School	Refrigeration	RTF	ComGroceryDisplayCaseLEDs_v2_1	20	14 to 27	Per Linear Foot of Refrigerated Glass Case	Value represents the average of the 'less than 4.0 Watts' and 'between 4.0 and 7.5 Watts' Power LED lamps. Represents an existing construction display case.
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Grocery	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Health	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Large Office	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Large Retail	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Lodging	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Miscellaneous	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Restaurant	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	School	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Small Office	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Small Retail	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Exit Sign - Photoluminescent or Tritium	Photoluminescent or Tritium	LED Exit Sign	Warehouse	Lighting Interior Other	6th PP	PC-Exit Sign-6P-D2	35	35	Per Exit Sign	
Floating Condenser Head Pressure Controls	Floating Condenser Head Pressure Controls	No Floating Condenser Head Pressure Controls	Grocery	Refrigeration	RTF	GroceryFHPCSingleCompressor_v1	692	473 to 855	Per 1,000 Sqft	Used RTF data to roll up the RTF measure iterations into one savings value, weighting equally
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Grocery	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Health	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Large Office	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Large Retail	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Lodging	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Miscellaneous	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Restaurant	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	School	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Small Office	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Small Retail	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 1	RTF Tier 1 Freezer (ENERGY STAR 10% to 20% More Efficient)	RTF Market Standard Freezer	Warehouse	Freezers	RTF	ResFreezer_v2_1	46	46	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 10% - 15% and 15% - 20% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Grocery	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Health	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Large Office	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Large Retail	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Lodging	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Miscellaneous	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Restaurant	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	School	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Small Office	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Small Retail	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 2	RTF Tier 2 Freezer (ENERGY STAR 20% to 30% More Efficient)	RTF Market Standard Freezer	Warehouse	Freezers	RTF	ResFreezer_v2_1	85	85	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. The range of savings represents the RTF savings for the given measure efficiency tier. For this measure the range represents 20% - 25% and 25% - 30% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Grocery	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Health	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Large Office	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Large Retail	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Lodging	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Miscellaneous	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Restaurant	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	School	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Small Office	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Small Retail	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Freezer (Residential) - RTF Tier 3	RTF Tier 3 Freezer (ENERGY STAR 30% to 35% More Efficient)	RTF Market Standard Freezer	Warehouse	Freezers	RTF	ResFreezer_v2_1	114	114	Per Freezer	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of freezer configurations. For this measure the range represents 30% - 35% savings.
Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Grocery	Cooking	RTF	FryersFY10v1_0	1,059	539	Per Fryer	Electric Commercial Fryer (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the CEE

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Health	Cooking	RTF	FryersFY10v1_0	1,059	539	Per Fryer	Electric Commercial Fryer (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the CEE
Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Lodging	Cooking	RTF	FryersFY10v1_0	1,059	539	Per Fryer	Electric Commercial Fryer (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the CEE
Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	Restaurant	Cooking	RTF	FryersFY10v1_0	1,059	539	Per Fryer	Electric Commercial Fryer (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the CEE
Fryers - New CEE Efficient Electric Deep Fat Fryers	15 inch width Deep Fryer CEE 2006 rating: 80% under heavy load, Less than 1000 watt at idle	15 inch width standard electric deep fat fryers	School	Cooking	RTF	FryersFY10v1_0	1,059	539	Per Fryer	Electric Commercial Fryer (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the CEE
Glass Door ENERGY STAR Refrigerators/ Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Grocery	Refrigeration	RTF	CommRefrigFreezer_v2_6	478	386 to 555	Per Glass Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Glass Door ENERGY STAR Refrigerators/ Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Health	Refrigeration	RTF	CommRefrigFreezer_v2_6	478	386 to 555	Per Glass Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Glass Door ENERGY STAR Refrigerators/ Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	Restaurant	Refrigeration	RTF	CommRefrigFreezer_v2_6	478	386 to 555	Per Glass Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Glass Door ENERGY STAR Refrigerators/ Freezers	Glass Door ENERGY STAR Refrigerators/Freezers	Standard Glass Doors	School	Refrigeration	RTF	CommRefrigFreezer_v2_6	478	386 to 555	Per Glass Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
High Efficiency Convection Oven	Convection Oven	Standard Oven	Grocery	Cooking	RTF	ConvectOvensFY10v1_1	1,644	946 to 1239	Per Convection Oven	Electric Convection Oven savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF
High Efficiency Convection Oven	Convection Oven	Standard Oven	Health	Cooking	RTF	ConvectOvensFY10v1_1	1,644	946 to 1239	Per Convection Oven	Electric Convection Oven savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF
High Efficiency Convection Oven	Convection Oven	Standard Oven	Lodging	Cooking	RTF	ConvectOvensFY10v1_1	1,644	946 to 1239	Per Convection Oven	Electric Convection Oven savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF
High Efficiency Convection Oven	Convection Oven	Standard Oven	Restaurant	Cooking	RTF	ConvectOvensFY10v1_1	1,644	946 to 1239	Per Convection Oven	Electric Convection Oven savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF
High Efficiency Convection Oven	Convection Oven	Standard Oven	School	Cooking	RTF	ConvectOvensFY10v1_1	1,644	946 to 1239	Per Convection Oven	Electric Convection Oven savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF
Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Grocery	Cooking	RTF	HotFoodHoldingCabinetsFY10v1_0	2,681	879 to 1752	Per Hot Food Holding Cabinet	Electric Insulated Holding Cabinet (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF; Weighted using the Sixth Plan weighting distribution, which sources ENERGY STAR

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Health	Cooking	RTF	HotFoodHoldingCabinetsFY10v1_0	2,681	879 to 1752	Per Hot Food Holding Cabinet	Electric Insulated Holding Cabinet (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF; Weighted using the Sixth Plan weighting distribution, which sources ENERGY STAR
Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Lodging	Cooking	RTF	HotFoodHoldingCabinetsFY10v1_0	2,681	879 to 1752	Per Hot Food Holding Cabinet	Electric Insulated Holding Cabinet (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF; Weighted using the Sixth Plan weighting distribution, which sources ENERGY STAR
Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	Restaurant	Cooking	RTF	HotFoodHoldingCabinetsFY10v1_0	2,681	879 to 1752	Per Hot Food Holding Cabinet	Electric Insulated Holding Cabinet (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF; Weighted using the Sixth Plan weighting distribution, which sources ENERGY STAR
Hot Food Holding Cabinet	ENERGY STAR	Non ENERGY STAR	School	Cooking	RTF	HotFoodHoldingCabinetsFY10v1_0	2,681	879 to 1752	Per Hot Food Holding Cabinet	Electric Insulated Holding Cabinet (Tier 1) savings were taken directly from the market characterization study, which sources ENERGY STAR and the RTF; Weighted using the Sixth Plan weighting distribution, which sources ENERGY STAR
Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Grocery	Other Plug Load	RTF	ComIceMakerFY10v1_0	829	172 to 1621	Per Ice Maker	Value represents the weighted average savings of RTF ENERGY STAR and CEE Tier 3 units, using weights provided in the PacifiCorp Market Characterization Report
Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Health	Other Plug Load	RTF	ComIceMakerFY10v1_0	829	172 to 1621	Per Ice Maker	Value represents the weighted average savings of RTF ENERGY STAR and CEE Tier 3 units, using weights provided in the PacifiCorp Market Characterization Report

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Lodging	Other Plug Load	RTF	ComIceMakerFY10v1_0	829	172 to 1621	Per Ice Maker	Value represents the weighted average savings of RTF ENERGY STAR and CEE Tier 3 units, using weights provided in the PacifiCorp Market Characterization Report
Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	Restaurant	Other Plug Load	RTF	ComIceMakerFY10v1_0	829	172 to 1621	Per Ice Maker	Value represents the weighted average savings of RTF ENERGY STAR and CEE Tier 3 units, using weights provided in the PacifiCorp Market Characterization Report
Ice Maker	High-Efficiency Ice Maker	Standard Ice Maker	School	Other Plug Load	RTF	ComIceMakerFY10v1_0	829	172 to 1621	Per Ice Maker	Value represents the weighted average savings of RTF ENERGY STAR and CEE Tier 3 units, using weights provided in the PacifiCorp Market Characterization Report
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Grocery	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.69	0.80	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Health	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.30	0.49	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Large Office	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.21	0.46	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Large Retail	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.45	0.43	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Lodging	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.07	0.11	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Miscellaneous	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.20	0.37	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Restaurant	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.34	0.75	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	School	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.27	0.31	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Small Office	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.21	0.43	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Small Retail	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.45	0.40	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Fluorescent High Performance - Above Standard	Above Standard Fluorescent High Performance Interior Lighting	Standard Interior Building Fluorescent Lighting	Warehouse	Lighting Interior Fluorescent	6th PP	PC-LPDPackage-6P-D16	0.08	0.10	Per Square Foot	The Sixth Power Plan savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T8 High Performance. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technologies T8 High Performance, T-8 Reduced Wattage, and T5s. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Grocery	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.25	0.38	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Health	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.03	0.04	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Large Retail	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.21	1.14	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Miscellaneous	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.22	0.08	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	School	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.07	0.13	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Small Retail	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.21	0.05	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - High Bay Fluorescent High Output - Above Standard	Above Standard High Bay Fluorescent High Output Interior Lighting	Standard High Pressure Sodium Interior Lighting	Warehouse	Lighting Interior HID	6th PP	PC-LPDPackage-6P-D16	0.22	0.53	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Large Office	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.44	0.14	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Lodging	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	4.75	1.72	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Restaurant	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	6.21	1.21	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	School	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.28	0.10	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Small Office	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.59	0.13	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base CFL - Above Standard	Above Standard Screw Base Interior CFL Lighting	Standard Interior Building Screw Base Lighting	Warehouse	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.61	0.05	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Grocery	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.39	0.26	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Health	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.44	0.21	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Large Office	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.08	0.14	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Lodging	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.87	0.36	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Interior - Screw Base LED - Above Standard	Above Standard Screw Base Interior LED Lighting	Standard Interior Building Screw Base Lighting	Restaurant	Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.14	0.51	Per Square Foot	The Sixth Power Plan and PacifiCorp savings represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. Natural replacement measures were compared to PacifiCorp values. The PacifiCorp values represent a combination of various lamp lengths and lamps per fixture for the lighting technology T5 High Output. The PacifiCorp measure savings include the technical feasibility factor to allow a comparison to the Sixth Plan LPD Package workbook values, which include a measure applicability factor. The saturation of lighting technologies have been updated with the 2008 Commercial Building Stock Assessment (CBSA), while the Sixth Plan does not include these saturation data.
Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	Grocery	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.52	2.5	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Package, High Efficiency	8% Reduction	Standard Lighting Power Density (LPD)	Health	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.38	2.1	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.
Lighting Package, High Efficiency	10% Reduction	Standard Lighting Power Density (LPD)	Large Office	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.27	1.2	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Package, High Efficiency	13% Reduction	Standard Lighting Power Density (LPD)	Large Retail	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.81	2.2	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.
Lighting Package, High Efficiency	19% Reduction	Standard Lighting Power Density (LPD)	Lodging	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.48	2.4	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Miscellaneous	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.31	1.0	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.
Lighting Package, High Efficiency	15% Reduction	Standard Lighting Power Density (LPD)	Restaurant	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.87	2.7	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Package, High Efficiency	7% Reduction	Standard Lighting Power Density (LPD)	School	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.18	0.8	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.
Lighting Package, High Efficiency	9% Reduction	Standard Lighting Power Density (LPD)	Small Office	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.25	1.0	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Lighting Package, High Efficiency	12% Reduction	Standard Lighting Power Density (LPD)	Small Retail	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.75	1.3	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.
Lighting Package, High Efficiency	11% Reduction	Standard Lighting Power Density (LPD)	Warehouse	Lighting Interior Other	6th PP	PC-LPDPackage-6P-D16	0.19	0.8	Per Square Foot	Sixth Plan savings values represent the 'new' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, new equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Health	Ventilation And Circulation	6th PP	PC-LowPressureDist-6P-D1	0.75	0.90	Per Building Sqft	This measure is broken out by the following building types: Large Office, Medium Office, Anchor, K-12, University, Other Health, and Other. The ventilation savings are based on the average of the Underfloor Air Distribution (UFAD) and Dedicated Outside Air System (DOAS) measure iterations. The savings vary based on building type due to the Sixth Power Plan assumptions made for the ventilation, cooling and heating end use consumptions. Due to a misclassification, the PacifiCorp building types for Health and Miscellaneous were given the more conservative savings value of 0.75 rather than 0.9 kWh per square foot.
Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Large Office	Ventilation And Circulation	6th PP	PC-LowPressureDist-6P-D1	0.90	0.90	Per Building Sqft	This measure is broken out by the following building types: Large Office, Medium Office, Anchor, K-12, University, Other Health, and Other. The ventilation savings are based on the average of the Underfloor Air Distribution (UFAD) and Dedicated Outside Air System (DOAS) measure iterations. The savings vary based on building type due to the Sixth Power Plan assumptions made for the ventilation, cooling and heating end use consumptions. Due to a misclassification, the PacifiCorp building types for Health and Miscellaneous were given the more conservative savings value of 0.75 rather than 0.9 kWh per square foot.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Large Retail	Ventilation And Circulation	6th PP	PC-LowPressureDist-6P-D1	0.75	0.75	Per Building Sqft	This measure is broken out by the following building types: Large Office, Medium Office, Anchor, K-12, University, Other Health, and Other. The ventilation savings are based on the average of the Underfloor Air Distribution (UFAD) and Dedicated Outside Air System (DOAS) measure iterations. The savings vary based on building type due to the Sixth Power Plan assumptions made for the ventilation, cooling and heating end use consumptions. Due to a misclassification, the PacifiCorp building types for Health and Miscellaneous were given the more conservative savings value of 0.75 rather than 0.9 kWh per square foot.
Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	Miscellaneous	Ventilation And Circulation	6th PP	PC-LowPressureDist-6P-D1	0.75	0.90	Per Building Sqft	This measure is broken out by the following building types: Large Office, Medium Office, Anchor, K-12, University, Other Health, and Other. The ventilation savings are based on the average of the Underfloor Air Distribution (UFAD) and Dedicated Outside Air System (DOAS) measure iterations. The savings vary based on building type due to the Sixth Power Plan assumptions made for the ventilation, cooling and heating end use consumptions. Due to a misclassification, the PacifiCorp building types for Health and Miscellaneous were given the more conservative savings value of 0.75 rather than 0.9 kWh per square foot.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low Pressure Distribution Complex HVAC	Low Pressure Distribution Complex HVAC	VAV/CV	School	Ventilation And Circulation	6th PP	PC-LowPressureDist-6P-D1	0.75	0.75	Per Building Sqft	This measure is broken out by the following building types: Large Office, Medium Office, Anchor, K-12, University, Other Health, and Other. The ventilation savings are based on the average of the Underfloor Air Distribution (UFAD) and Dedicated Outside Air System (DOAS) measure iterations. The savings vary based on building type due to the Sixth Power Plan assumptions made for the ventilation, cooling and heating end use consumptions. Due to a misclassification, the PacifiCorp building types for Health and Miscellaneous were given the more conservative savings value of 0.75 rather than 0.9 kWh per square foot.
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Grocery	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Health	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Large Retail	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Lodging	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Miscellaneous	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	Restaurant	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Pre-Rinse Spray Valves	0.6 GPM	1.6 GPM (Federal Standard)	School	Water Heat	RTF	PRSVFY10v1_0	430	430	Per Pre-Rinse Spray Valve	
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Health	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	106	136	Per Showerhead	RTF value represents Health Care - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Large Office	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	71	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Lodging	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	134	171	Per Showerhead	RTF value represents Hospitality - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Miscellaneous	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	71	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	School	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	71	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low-Flow Showerheads	1.5 GPM	1.75 GPM (WA State Code 2009)	Warehouse	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	71	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Health	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	272	136	Per Showerhead	RTF value represents Health Care - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Large Office	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	181	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Lodging	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	343	171	Per Showerhead	RTF value represents Hospitality - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Miscellaneous	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	181	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	School	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	181	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Low-Flow Showerheads	1.75 GPM (WA State Code 2009)	3.0 GPM	Warehouse	Water Heat	RTF	ComDHW_LowFlowShowerheads_FY10v2_0	181	90	Per Showerhead	RTF value represents Small Commercial - Employee Shower - Electric Water Heater - Retail 1.75 GPM; The claimed PacifiCorp value represents consistent savings of kWh per GPM Reduction and were adjusted to match measure's GPM Reduction. The RTF baseline represents a 2.5 GPM rated showerhead with a 10% pressure drop resulting in approximately a 2.2 GPM baseline flow rate.
Motor Rewind	>15, <500 HP	No Rewind	Grocery	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Health	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Large Office	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Large Retail	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Lodging	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Miscellaneous	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Restaurant	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	School	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Small Office	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Motor Rewind	>15, <500 HP	No Rewind	Small Retail	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Motor Rewind	>15, <500 HP	No Rewind	Warehouse	Ventilation And Circulation	RTF	IndGreenMotorsRewind_v1_3	17	13.4 to 21.4	Per Horsepower	Using the claimed RTF HP, the savings range from 13.4 to 21.4 kWh per HP over 7.5 to 5000 HP motors.
Network PC Power Management	Network PC Power Management	No Power Management	Health	Computers	RTF	NonResNetCompPwrMgt_v3_0	162	84 to 172	Per Computer	Network PC Power Management Software savings were taken directly from the market characterization study, which sources the RTF
Network PC Power Management	Network PC Power Management	No Power Management	Large Office	Computers	RTF	NonResNetCompPwrMgt_v3_0	162	84 to 172	Per Computer	Network PC Power Management Software savings were taken directly from the market characterization study, which sources the RTF
Network PC Power Management	Network PC Power Management	No Power Management	Miscellaneous	Computers	RTF	NonResNetCompPwrMgt_v3_0	162	84 to 172	Per Computer	Network PC Power Management Software savings were taken directly from the market characterization study, which sources the RTF
Network PC Power Management	Network PC Power Management	No Power Management	School	Computers	RTF	NonResNetCompPwrMgt_v3_0	162	84 to 172	Per Computer	Network PC Power Management Software savings were taken directly from the market characterization study, which sources the RTF
Network PC Power Management	Network PC Power Management	No Power Management	Small Office	Computers	RTF	NonResNetCompPwrMgt_v3_0	162	84 to 172	Per Computer	Network PC Power Management Software savings were taken directly from the market characterization study, which sources the RTF

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Health	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.09	0.21	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Office	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.14	0.35	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.15	0.27	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.15	0.25	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	School	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.06	0.32	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Warehouse	Cooling Chillers	6th PP	PC-IntDesign-6P-D1	0.09	0.07	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Grocery	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.26	0.51	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Health	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.13	0.31	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Office	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.25	0.63	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Retail	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.27	0.45	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.19	0.35	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.23	0.38	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Restaurant	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.30	0.55	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	School	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.09	0.53	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Office	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.28	0.32	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Retail	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.22	0.24	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Warehouse	Cooling Dx Evap	6th PP	PC-IntDesign-6P-D1	0.13	0.11	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Cooling Room	6th PP	PC-IntDesign-6P-D1	0.21	0.38	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Cooling Room	6th PP	PC-IntDesign-6P-D1	0.24	0.40	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Grocery	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.40	0.78	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Health	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.37	0.88	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Office	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.43	1.06	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Retail	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.43	0.72	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.46	0.85	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.41	0.68	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Restaurant	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.48	0.90	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	School	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.52	2.86	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Office	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.51	0.59	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Retail	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.43	0.45	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Warehouse	Heat Pump	6th PP	PC-IntDesign-6P-D1	0.37	0.30	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Grocery	Space Heat	6th PP	PC-IntDesign-6P-D1	0.30	0.59	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Health	Space Heat	6th PP	PC-IntDesign-6P-D1	0.42	1.01	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Office	Space Heat	6th PP	PC-IntDesign-6P-D1	0.42	1.04	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Retail	Space Heat	6th PP	PC-IntDesign-6P-D1	0.29	0.48	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Space Heat	6th PP	PC-IntDesign-6P-D1	0.50	0.91	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Space Heat	6th PP	PC-IntDesign-6P-D1	0.34	0.55	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Restaurant	Space Heat	6th PP	PC-IntDesign-6P-D1	0.25	0.46	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	School	Space Heat	6th PP	PC-IntDesign-6P-D1	0.76	4.23	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Office	Space Heat	6th PP	PC-IntDesign-6P-D1	0.50	0.58	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Retail	Space Heat	6th PP	PC-IntDesign-6P-D1	0.30	0.31	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Warehouse	Space Heat	6th PP	PC-IntDesign-6P-D1	0.71	0.57	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Grocery	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.43	0.84	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Health	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.62	1.50	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Office	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.49	1.21	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Large Retail	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.34	0.57	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Lodging	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.35	0.64	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Miscellaneous	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.32	0.53	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Restaurant	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.49	0.91	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	School	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.25	1.36	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Office	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.37	0.43	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Small Retail	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.35	0.38	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - HVAC	Standard Design	Warehouse	Ventilation And Circulation	6th PP	PC-IntDesign-6P-D1	0.20	0.16	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Grocery	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.82	1.62	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Health	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.58	1.40	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Large Office	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.47	1.17	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Large Retail	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.88	1.47	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Lodging	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.36	0.66	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Miscellaneous	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.51	0.85	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Restaurant	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.70	1.30	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	School	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.53	2.94	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Small Office	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.56	0.65	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Small Retail	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.91	0.96	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
New Construction Integrated Bldg Design	Design team and EE Construction - Lighting	Standard Design	Warehouse	Lighting Interior Other	6th PP	PC-IntDesign-6P-D1	0.70	0.56	Per Building Sqft	Integrated Design input assumptions were pulled from the Sixth Power Plan's Integrated Design workbook which referenced ETO program results. The ETO data was used instead of the Sixth Plan workbooks (LPD Package, Top Daylighting, Perimeter Daylighting Controls Advanced, Lighting Controls Interior, ECM on VAV Boxes, Premium HVAC Equipment, Glass, Package Roof Top Optimization and Repair, Variable Speed Chiller, Controls Commission Complex HVAC, Evaporative Assist Cooling, Low Pressure Distribution Complex HVAC, and Demand Control Ventilation) to avoid double counting. The results were weighted for each building type. This weighted savings was applied to the PacifiCorp lighting and HVAC end uses by using a consumption distribution specific to each building type. Since the development of the Sixth Plan workbooks, Washington code and federal standards have improved, which impact the claimed savings. These impacts are captured in the PacifiCorp equipment EUIs, which account for code and standard changes through baseline efficiency assumptions and equipment turnover.
Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	403	403	Per Night Cover	
Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Miscellaneous	Refrigeration	6th PP	PC-Grocery-6P-D3	403	403	Per Night Cover	
Night Covers for Display Cases	Night Covers for Display Cases	No Night Covers	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	403	403	Per Night Cover	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	816	816	Per Refrigeration Ton	
Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	816	816	Per Refrigeration Ton	
Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	816	816	Per Refrigeration Ton	
Refrigeration Commissioning or Re-commissioning	Commissioning / Re-commissioning	No Commissioning / Re-commissioning	School	Refrigeration	6th PP	PC-Grocery-6P-D3	816	816	Per Refrigeration Ton	

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Grocery	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Health	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Large Office	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Large Retail	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Lodging	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Miscellaneous	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Restaurant	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	School	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

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Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Small Office	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Small Retail	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 1 (ENERGY STAR)	RTF Tier 1 (ENERGY STAR) Refrigerator	RTF Market Standard Refrigerator	Warehouse	Refrigerators	RTF	ResRefrigerators_v2_1	37	37	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Grocery	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Health	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Large Office	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Large Retail	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Lodging	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Miscellaneous	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Restaurant	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	School	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Small Office	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Small Retail	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 2	RTF Tier 2 Refrigerator	RTF Market Standard Refrigerator	Warehouse	Refrigerators	RTF	ResRefrigerators_v2_1	65	65	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Grocery	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Health	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Large Office	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Large Retail	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Lodging	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Miscellaneous	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Restaurant	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	School	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Small Office	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Small Retail	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Refrigerator - RTF Tier 3	RTF Tier 3 Refrigerator	RTF Market Standard Refrigerator	Warehouse	Refrigerators	RTF	ResRefrigerators_v2_1	86	86	Per Refrigerator	RTF and PacifiCorp savings represent the weighted average based on the RTF claimed market share of refrigerator configurations. CEE Tier 1 is ENERGY STAR. The ENERGY STAR value in the RTF encompasses all refrigerators above the ENERGY STAR standard. CEE Tier 1 (RTF Tier 1) includes only models between the ENERGY STAR (CEE Tier1) standard and CEE Tier 2 standard. This is evident in the RTF in that a "ENERGY STAR Refrigerator" consumes less energy than the "CEE Tier 1 Refrigerator". For the purpose of this potential study we have considered each of the three tiers incrementally, ENERGY STAR/CEE Tier 1, CEE Tier 2, & CEE Tier 3 (RTF Tier 1, 2, & 3). Note that the supposed fourth tier is simply an average of the other three tiers.
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Grocery	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Health	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Large Office	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Large Retail	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Lodging	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Miscellaneous	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Restaurant	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	School	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Small Office	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Small Retail	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Freezer Recycling	Recycling Existing Freezer	Existing Freezer	Warehouse	Freezers	RTF	FrigRecycle_FY10v2_3	542	555	Per Recycled Freezer	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Grocery	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Health	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Large Office	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Large Retail	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Lodging	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Miscellaneous	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Restaurant	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	School	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Small Office	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Small Retail	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data
Residential Refrigerator/Freezer Recycling	Recycling Existing Refrigerator/Freezer	Existing Refrigerator/Freezer	Warehouse	Refrigerators	RTF	FrigRecycle_FY10v2_3	724	482	Per Recycled Refrigerator	The PacifiCorp savings incorporate PacifiCorp evaluation data

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Grocery	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.4	2.4	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Health	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.7	1.8	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Large Office	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.0	1.0	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Large Retail	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	2.5	2.0	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Lodging	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	2.2	1.7	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Miscellaneous	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.1	0.7	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Restaurant	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	3.4	2.1	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	School	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.5	0.7	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Small Office	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	1.0	1.7	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Small Retail	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	2.5	1.0	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Retrofit Lighting Bundle - Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	Improvements to LPD based on equivalent lumen levels within lighting technology types	Below Code Lighting Power Density (LPD)	Warehouse	Lighting Interior Fluorescent, Lighting Interior HID, and Lighting Interior Screw Base	6th PP	PC-LPDPackage-6P-D16	0.8	0.6	Per Square Foot	Sixth Plan savings values represent the 'retro' construction type and the weighted average savings of the three heating types (Electric heat, Heat Pump, Gas heat). The PacifiCorp savings were developed using a LPD savings calculator, which incorporated the recently adopted 2009 WA LPD requirements and 2008 CBSA wattage distributions. The baseline LPD represents the average below code LPD based on building type. Various differences in inputs are driving the discrepancies such as: technology wattage distributions, hours of operation, existing equipment saturations, and baseline LPD.
Server Virtualization	Server Virtualization	No Virtualization	Health	Servers	6th PP	PC-ServerRooms and IT-6P-D2	2,250	2,250	Per Server	
Server Virtualization	Server Virtualization	No Virtualization	Large Office	Servers	6th PP	PC-ServerRooms and IT-6P-D2	2,250	2,250	Per Server	
Server Virtualization	Server Virtualization	No Virtualization	Miscellaneous	Servers	6th PP	PC-ServerRooms and IT-6P-D2	2,250	2,250	Per Server	
Server Virtualization	Server Virtualization	No Virtualization	School	Servers	6th PP	PC-ServerRooms and IT-6P-D2	2,250	2,250	Per Server	
Server Virtualization	Server Virtualization	No Virtualization	Small Office	Servers	6th PP	PC-ServerRooms and IT-6P-D2	2,250	2,250	Per Server	
Smart Strips	Smart Strip Power Strip	Standard surge protector	Grocery	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Smart Strips	Smart Strip Power Strip	Standard surge protector	Health	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Large Office	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Large Retail	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Lodging	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Miscellaneous	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Restaurant	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	School	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Small Office	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Smart Strips	Smart Strip Power Strip	Standard surge protector	Small Retail	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Smart Strips	Smart Strip Power Strip	Standard surge protector	Warehouse	Other Plug Load	RTF	PowerStripsFY10v1_0	100	100	Per Power Strip	Smart Plug Strips savings were taken directly from the market characterization study, which sources the RTF
Solid Door ENERGY STAR Refrigerators/ Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Grocery	Refrigeration	RTF	CommRefrigFreezer_v2_6	376	208 to 550	Per Solid Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Solid Door ENERGY STAR Refrigerators/ Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Health	Refrigeration	RTF	CommRefrigFreezer_v2_6	376	208 to 550	Per Solid Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Solid Door ENERGY STAR Refrigerators/ Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	Restaurant	Refrigeration	RTF	CommRefrigFreezer_v2_6	376	208 to 550	Per Solid Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Solid Door ENERGY STAR Refrigerators/ Freezers	Solid Door ENERGY STAR Refrigerators/Freezers	Standard Solid Door	School	Refrigeration	RTF	CommRefrigFreezer_v2_6	376	208 to 550	Per Solid Door Refrigerator	Current savings reflect an straight average of the different fridge volume buckets.
Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	615	615	Per Multiplex Compressor	
Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	615	615	Per Multiplex Compressor	
Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Miscellaneous	Refrigeration	6th PP	PC-Grocery-6P-D3	615	615	Per Multiplex Compressor	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	615	615	Per Multiplex Compressor	
Standalone to Multiplex Compressor	Standalone to Multiplex Compressor	Standalone compressor	School	Refrigeration	6th PP	PC-Grocery-6P-D3	615	615	Per Multiplex Compressor	
Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Grocery	Refrigeration	RTF	Grocery_StripCurtains_FY10v1_1	273	103 to 443	Per Walk-in	Savings represent a direct average of all the RTF Supermarket iterations broken out by Freezer and Cooler
Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Health	Refrigeration	RTF	Grocery_StripCurtains_FY10v1_1	273	103 to 443	Per Walk-in	Savings represent a direct average of all the RTF Supermarket iterations broken out by Freezer and Cooler
Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	Restaurant	Refrigeration	RTF	Grocery_StripCurtains_FY10v1_1	273	103 to 443	Per Walk-in	Savings represent a direct average of all the RTF Supermarket iterations broken out by Freezer and Cooler
Strip Curtains for Walk-Ins	Strip Curtains for Walk-Ins	No Strip Curtains for Walk-In	School	Refrigeration	RTF	Grocery_StripCurtains_FY10v1_1	273	103 to 443	Per Walk-in	Savings represent a direct average of all the RTF Supermarket iterations broken out by Freezer and Cooler
VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Grocery	Refrigeration	RTF	GroceryHVACvfd_v1_1	7,891	1295 to 25510	Per Rooftop Supply Fan	The RTF savings to represent the range of savings for VFD rooftop fans which varies by the horsepower of supply fan and the hours of operation
VFD Rooftop Unit Supply Fan (Grocery Only)	VFD Rooftop Unit Supply Fan (Grocery Only)	Standard Supply Fan	Miscellaneous	Refrigeration	RTF	GroceryHVACvfd_v1_1	7,891	1295 to 25510	Per Rooftop Supply Fan	The RTF savings to represent the range of savings for VFD rooftop fans which varies by the horsepower of supply fan and the hours of operation
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Grocery	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Health	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Lodging	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Miscellaneous	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	Restaurant	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	

PacifiCorp					RTF or 6th Power Plan		PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Measure Name	Measure Efficiency	Baseline Efficiency	Segment	End Use	Measure	Workbooks Analyzed				
Visi Cooler	High Efficiency Visi Cooler	Standard Visi Cooler	School	Refrigeration	6th PP	PC-Grocery-6P-D3	31	31	Per Visi Cooler	
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Grocery	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Health	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Lodging	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Miscellaneous	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	Restaurant	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally
Walk-in Evaporator Fan ECMotor Controllers	Walk-in Evaporator Fan ECMotor Controllers	Standard Equipment	School	Refrigeration	RTF	GroceryEvapFanControllerECMWalkIn_v1	155	28 to 194	Per Walk-in Evaporator Fan Controller	Used RTF data to roll up the direct fan and refrigeration savings and weighting the low and medium temp walk-ins equally

Table C-6.3. Industrial Measure-Level Comparison

PacifiCorp Sector	Pacificorp Measure Name	RTF or 6th Power Plan (6th PP) Measure	RTF/6th Plan Workbooks Analyzed	Pacificorp Savings Value (% of end use consumption)	RTF or 6th Plan Savings Value (% of end use consumption)	Notes
Industrial	Air Compressor Demand Reduction	6th PP	PC-Industrial-D12 with Industrial_tool_111209	16%	20%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC and Council 6th Plan data.
Industrial	Air Compressor Equipment	6th PP	PC-Industrial-D12 with Industrial_tool_111209	20%	35%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC and Council 6th Plan data.
Industrial	Air Compressor Optimization	6th PP	PC-Industrial-D12 with Industrial_tool_111209	30%	50%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC (10.2%) and Council 6th Plan (50%) data.
Industrial	Clean Room: Change Filter Strategy	6th PP	PC-Industrial-D12 with Industrial_tool_111209	40%	40%	
Industrial	Clean Room: Chiller Optimize	6th PP	PC-Industrial-D12 with Industrial_tool_111209	15%	15%	
Industrial	Clean Room: Clean Room HVAC	6th PP	PC-Industrial-D12 with Industrial_tool_111209	9%	9%	
Industrial	Cold Storage Retrofit	6th PP	PC-Industrial-D12 with Industrial_tool_111209	17%	26%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC and Council 6th Plan data.
Industrial	Cold Storage Tuneup	6th PP	PC-Industrial-D12 with Industrial_tool_111209	16%	10%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC and Council 6th Plan data.
Industrial	Efficient Centrifugal Fan	6th PP	PC-Industrial-D12 with Industrial_tool_111209	20%	20%	
Industrial	Facility Energy Management	6th PP	PC-Industrial-D12 with Industrial_tool_111209	2%	29%	Analysis updated based on NEEA Market Progress Evaluation Report (2011) and Behavior-Change Savings Case Studies, Puget Sound (2008)
Industrial	Fan Equipment Upgrade	6th PP	PC-Industrial-D12 with Industrial_tool_111209	35%	35%	
Industrial	Fan System Optimization	6th PP	PC-Industrial-D12 with Industrial_tool_111209	8%	50%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. The Council 6th Plan savings is based on large projects. PacifiCorp did not reference the Council data since all large projects have been achieved through the program.
Industrial	Food: Cooling and Storage	6th PP	PC-Industrial-D12 with Industrial_tool_111209	15%	15%	
Industrial	Improved Controls - Fans	6th PP	PC-Industrial-D12 with Industrial_tool_111209	6%	10%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. The Council 6th Plan savings is based on large projects. PacifiCorp did not reference the Council data since all large projects have been achieved through the program.
Industrial	Kraft: Efficient Agitator	6th PP	PC-Industrial-D12 with Industrial_tool_111209	50%	50%	

PacifiCorp Sector	Pacificorp Measure Name	RTF or 6th Power Plan (6th PP) Measure	RTF/6th Plan Workbooks Analyzed	Pacificorp Savings Value (% of end use consumption)	RTF or 6th Plan Savings Value (% of end use consumption)	Notes
Industrial	Kraft: Effluent Treatment System	6th PP	PC-Industrial-D12 with Industrial_tool_111209	15%	15%	
Industrial	Lighting Controls	6th PP	PC-Industrial-D12 with Industrial_tool_111209	18%	28%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database. Averaged IAC and Council 6th Plan data.
Industrial	Material Handling	6th PP	PC-Industrial-D12 with Industrial_tool_111209	5%	5%	
Industrial	Material Handling VFD	6th PP	PC-Industrial-D12 with Industrial_tool_111209	19%	19%	
Industrial	Mech Pulp: Premium Process	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.2%	0.2%	
Industrial	Mech Pulp: Refiner Plate Improvement	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.4%	0.4%	
Industrial	Metal: New Arc Furnace	6th PP	PC-Industrial-D12 with Industrial_tool_111209	45%	45%	
Industrial	Motors: Rewind 101-200 HP	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.6%	0.5%	Derived from PacifiCorp's Market Characterization reports (2012) which is based on RTF data within the IndGreenMotorsRewind_v1_3 workbook.
Industrial	Motors: Rewind 201-500 HP	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.5%	0.5%	Derived from PacifiCorp's Market Characterization reports (2012) which is based on RTF data within the IndGreenMotorsRewind_v1_3 workbook.
Industrial	Motors: Rewind 20-50 HP	6th PP	PC-Industrial-D12 with Industrial_tool_111209	1.0%	0.9%	Derived from PacifiCorp's Market Characterization reports (2012) which is based on RTF data within the IndGreenMotorsRewind_v1_3 workbook.
Industrial	Motors: Rewind 500+ HP	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.6%	0.5%	Derived from PacifiCorp's Market Characterization reports (2012) which is based on RTF data within the IndGreenMotorsRewind_v1_3 workbook.
Industrial	Motors: Rewind 51-100 HP	6th PP	PC-Industrial-D12 with Industrial_tool_111209	0.6%	0.5%	Derived from PacifiCorp's Market Characterization reports (2012) which is based on RTF data within the IndGreenMotorsRewind_v1_3 workbook.
Industrial	Multiple standard lighting options	6th PP	PC-Industrial-D12 with Industrial_tool_111209	21%	70%	Lighting analysis consistent with commercial warehouse assumptions
Industrial	Multiple high-bay lighting options	6th PP	PC-Industrial-D12 with Industrial_tool_111209	19%	51%	Lighting analysis consistent with commercial warehouse assumptions
Industrial	Panel: Hydraulic Press	6th PP	PC-Industrial-D12 with Industrial_tool_111209	28%	28%	
Industrial	Paper: Efficient Pulp Screen	6th PP	PC-Industrial-D12 with Industrial_tool_111209	15%	15%	
Industrial	Paper: Large Material Handling	6th PP	PC-Industrial-D12 with Industrial_tool_111209	10%	10%	
Industrial	Paper: Material Handling	6th PP	PC-Industrial-D12 with Industrial_tool_111209	13%	13%	
Industrial	Paper: Premium Control Large Material	6th PP	PC-Industrial-D12 with Industrial_tool_111209	19%	19%	

PacifiCorp Sector	Pacificorp Measure Name	RTF or 6th Power Plan (6th PP) Measure	RTF/6th Plan Workbooks Analyzed	Pacificorp Savings Value (% of end use consumption)	RTF or 6th Plan Savings Value (% of end use consumption)	Notes
Industrial	Paper: Premium Fan	6th PP	PC-Industrial-D12 with Industrial_tool_111209	20%	20%	
Industrial	Pump Equipment Upgrade	6th PP	PC-Industrial-D12 with Industrial_tool_111209	20%	20%	
Industrial	Pump System Optimization	6th PP	PC-Industrial-D12 with Industrial_tool_111209	12%	50%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database
Industrial	Recommissioning / Facility Energy Management	6th PP	PC-Industrial-D12 with Industrial_tool_111209	5%	50%	Derived from ENERGY STAR Buildings Manual
Industrial	Synchronous Belts	6th PP	PC-Industrial-D12 with Industrial_tool_111209	1.1%	2.0%	Derived from reported energy savings from the Department of Energy's (DOE) Industrial Assessment Center (IAC) Database
Industrial	Transformers	6th PP	PC-Industrial-D12 with Industrial_tool_111209	1.6%	1.5%	
Industrial	Wood: Replace Pneumatic Conveyor	6th PP	PC-Industrial-D12 with Industrial_tool_111209	29%	29%	
Industrial (Agriculture)	VFDs - Potato / Onion Shed	RTF	Spud_OnionShedVFD_FY10v1_2	32%	32%	
Industrial (Agriculture)	High-efficiency Livestock Waterers	RTF	AgStockWateringTank_v1_4	75%	100%	The RTF assumes 100% measure savings by increasing the insulation and removing the electric heater. PacifiCorp assumes 75% measure savings by increasing insulation with back-up heater. PacifiCorp savings percent updated based on manufacturer specifications.
Industrial (Agriculture)	VFDs for Dairy Vacuum Pumps	RTF	AgDairyVFD_v1_2	58%	62%	PacifiCorp savings based on Utah Power Case Study.

Table C-6.4. Street Lights Measure-Level Comparison

PacifiCorp Sector	PacifiCorp Measure Name	PacifiCorp Measure Efficiency	6th Plan Measure	PacifiCorp Baseline Efficiency	RTF/6th Plan Workbooks Analyzed	PacifiCorp Savings Value per Unit	RTF/6th Plan Savings Value Per Unit	Savings Unit	Notes
Streetlight	LED 100 WATT EQUIVALENT	LED 78W	LED 78W	HPS 100W	PC-StreetRoadway-6P-D2	195.8	178.0	kWh Per LED Streetlight	Slight difference in annual operating hours (4140 hrs for 6th Plan versus 4167 hrs for PC) and baseline wattage (121W for 6th Plan versus 125W for PC).
Streetlight	LED 100 WATT EQUIVALENT		LED 60W	HPS 100W	PC-StreetRoadway-6P-D2		252.5	kWh Per LED Streetlight	LED replacement wattage not considered. PacifiCorp LED wattage based on program data of actual equipment wattages.
Streetlight	LED 150 WATT EQUIVALENT	LED 106W	LED 111W	HPS 150W	PC-StreetRoadway-6P-D2	245.9	248.4	kWh Per LED Streetlight	Slight difference in annual operating hours (4140 hrs for 6th Plan versus 4167 hrs for PC) and baseline wattage (121W for 6th Plan versus 125W for PC).
Streetlight	LED 150 WATT EQUIVALENT		LED 117W	HPS 150W	PC-StreetRoadway-6P-D2		223.6	kWh Per LED Streetlight	LED replacement wattage not considered. PacifiCorp LED wattage based on program data of actual equipment wattages.

APPENDIX D

APPENDIX D-1. SUPPLEMENTAL RESOURCE SUPPLEMENT: COMBINED HEAT AND POWER

Appendix D-1 provides the details behind the potential estimates for combined heat and power (CHP).

Table D-1.1. Total CHP Market Potential by Year

	Installed Capacity (MW)	Annual Energy (aMW)
2013	17	9
2014	34	17
2015	50	26
2016	67	35
2017	84	43
2018	101	52
2019	117	60
2020	134	69
2021	151	77
2022	168	86
2023	182	93
2024	197	100
2025	211	107
2026	226	114
2027	241	121
2028	255	128
2029	270	135
2030	284	142
2031	298	149
2032	312	155

Table D-1.2. CHP Market Potential by State and Configuration – 2032

System Type	Projected Incremental Installed System Capacity Operating in 2032 (MW)						
	CA	ID	OR	UT	WA	WY	Total
Natural Gas	4	12	25	184	32	26	283
30–99 kW	*0.4*	*0.8*	*1.6*	*4.6*	*1.0*	*1.1*	*10*
100-199 kW	*0.8*	*2.3*	*3.7*	*23.5*	*4.6*	*4.0*	*39*
200-499 kW	*0.9*	*2.6*	*5.5*	*44.7*	*9.1*	*5.8*	*69*
500–999 kW	*0.2*	*0.6*	*2.9*	*28.9*	*6.1*	*2.6*	*41*
1–4.9 MW	*1.5*	*3.4*	*8.2*	*62.0*	*11.4*	*8.3*	*95*
5 MW+	*0.0*	*2.0*	*3.2*	*20.6*	*0.0*	*3.8*	*30*
Industrial Biomass	1.0	0.2	11.0	3.2	2.4	0.5	18
Biogas	0.1	1.5	2.1	3.5	0.5	2.8	10
Total	**5**	**13**	**38**	**191**	**35**	**29**	**312**

Table D-1.3. California CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.15	0.06	4.7	$0.08
2014	0.31	0.12	4.7	$0.08
2015	0.46	0.18	4.7	$0.08
2016	0.62	0.24	4.7	$0.08
2017	0.77	0.31	4.8	$0.08
2018	0.92	0.37	4.8	$0.09
2019	1.08	0.43	4.8	$0.09
2020	1.23	0.49	4.9	$0.09
2021	1.39	0.55	4.9	$0.09
2022	1.54	0.60	4.9	$0.09
2023	1.69	0.66	5.0	$0.09
2024	1.85	0.72	5.0	$0.09
2025	2.00	0.78	5.0	$0.09
2026	2.16	0.84	5.1	$0.09
2027	2.31	0.90	5.1	$0.09
2028	2.46	0.96	5.1	$0.09
2029	2.62	1.01	5.2	$0.09
2030	2.77	1.07	5.2	$0.09
2031	2.93	1.13	5.2	$0.09
2032	3.08	1.19	5.3	$0.09

Table D-1.4. California CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.02	0.01	6.8	$0.12
2014	0.05	0.02	6.8	$0.12
2015	0.07	0.04	6.9	$0.12
2016	0.10	0.05	6.9	$0.12
2017	0.12	0.06	7.0	$0.12
2018	0.14	0.07	7.0	$0.12
2019	0.17	0.08	7.1	$0.12
2020	0.19	0.09	7.1	$0.13
2021	0.22	0.10	7.1	$0.13
2022	0.24	0.12	7.2	$0.13
2023	0.24	0.12	7.2	$0.13
2024	0.24	0.12	7.2	$0.13
2025	0.24	0.12	7.2	$0.14
2026	0.24	0.12	7.2	$0.14
2027	0.24	0.12	7.2	$0.14
2028	0.24	0.12	7.2	$0.14
2029	0.24	0.12	7.2	$0.14
2030	0.24	0.12	7.2	$0.14
2031	0.24	0.12	7.2	$0.14
2032	0.24	0.12	7.2	$0.14

Table D-1.5. California CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.01	0.01	5.9	$0.14
2014	0.02	0.01	5.9	$0.14
2015	0.03	0.02	5.9	$0.14
2016	0.04	0.03	6.0	$0.14
2017	0.05	0.04	6.0	$0.15
2018	0.06	0.04	6.0	$0.15
2019	0.07	0.05	6.1	$0.16
2020	0.08	0.06	6.1	$0.16
2021	0.09	0.06	6.2	$0.16
2022	0.10	0.07	6.2	$0.17
2023	0.10	0.07	6.2	$0.17
2024	0.10	0.07	6.2	$0.17
2025	0.10	0.07	6.2	$0.18
2026	0.10	0.07	6.2	$0.18
2027	0.10	0.07	6.2	$0.18
2028	0.10	0.07	6.2	$0.19
2029	0.10	0.07	6.2	$0.19
2030	0.10	0.07	6.2	$0.19
2031	0.10	0.07	6.2	$0.19
2032	0.10	0.07	6.2	$0.19

Table D-1.6. California CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.02	0.02	6.4	$0.07
2014	0.05	0.04	6.5	$0.07
2015	0.07	0.06	6.5	$0.07
2016	0.09	0.07	6.6	$0.07
2017	0.12	0.09	6.6	$0.08
2018	0.14	0.11	6.7	$0.08
2019	0.16	0.13	6.7	$0.08
2020	0.18	0.15	6.7	$0.08
2021	0.21	0.17	6.8	$0.08
2022	0.23	0.18	6.8	$0.08
2023	0.25	0.20	6.9	$0.08
2024	0.28	0.22	6.9	$0.08
2025	0.30	0.24	7.0	$0.08
2026	0.32	0.26	7.0	$0.08
2027	0.35	0.27	7.1	$0.08
2028	0.37	0.29	7.1	$0.08
2029	0.39	0.31	7.2	$0.09
2030	0.42	0.33	7.2	$0.09
2031	0.44	0.34	7.2	$0.09
2032	0.46	0.36	7.3	$0.09

Table D-1.7. California CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.05	0.04	$0.01
2014	0.10	0.09	$0.01
2015	0.14	0.13	$0.01
2016	0.19	0.17	$0.01
2017	0.24	0.21	$0.01
2018	0.29	0.26	$0.01
2019	0.33	0.30	$0.01
2020	0.38	0.34	$0.01
2021	0.43	0.38	$0.01
2022	0.48	0.42	$0.01
2023	0.52	0.46	$0.01
2024	0.57	0.50	$0.01
2025	0.62	0.55	$0.01
2026	0.67	0.59	$0.01
2027	0.72	0.63	$0.01
2028	0.76	0.67	$0.01
2029	0.81	0.71	$0.01
2030	0.86	0.75	$0.01
2031	0.91	0.79	$0.01
2032	0.95	0.83	$0.01

Table D-1.8. California CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.01	0.003	$0.06
2014	0.01	0.01	$0.06
2015	0.02	0.01	$0.06
2016	0.02	0.01	$0.06
2017	0.03	0.01	$0.07
2018	0.04	0.02	$0.07
2019	0.04	0.02	$0.07
2020	0.05	0.02	$0.07
2021	0.05	0.02	$0.07
2022	0.06	0.03	$0.07
2023	0.07	0.03	$0.07
2024	0.07	0.03	$0.07
2025	0.08	0.03	$0.07
2026	0.09	0.04	$0.07
2027	0.09	0.04	$0.07
2028	0.10	0.04	$0.07
2029	0.10	0.04	$0.07
2030	0.10	0.04	$0.07
2031	0.10	0.04	$0.07
2032	0.10	0.04	$0.07

Table D-1.9. California CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	0.3	0.1
2014	0.5	0.3
2015	0.8	0.4
2016	1.1	0.6
2017	1.3	0.7
2018	1.6	0.9
2019	1.9	1.0
2020	2.1	1.1
2021	2.4	1.3
2022	2.7	1.4
2023	2.9	1.5
2024	3.1	1.7
2025	3.3	1.8
2026	3.6	1.9
2027	3.8	2.0
2028	4.0	2.1
2029	4.3	2.3
2030	4.5	2.4
2031	4.7	2.5
2032	4.9	2.6

Table D-1.10. Idaho CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.40	0.16	4.6	$0.08
2014	0.80	0.32	4.7	$0.08
2015	1.20	0.48	4.7	$0.08
2016	1.60	0.64	4.7	$0.08
2017	2.00	0.79	4.8	$0.08
2018	2.40	0.95	4.8	$0.09
2019	2.79	1.10	4.8	$0.09
2020	3.19	1.26	4.9	$0.09
2021	3.59	1.41	4.9	$0.09
2022	3.99	1.57	4.9	$0.09
2023	4.39	1.72	4.9	$0.09
2024	4.79	1.87	5.0	$0.09
2025	5.19	2.03	5.0	$0.09
2026	5.59	2.18	5.0	$0.09
2027	5.99	2.33	5.1	$0.09
2028	6.39	2.48	5.1	$0.09
2029	6.79	2.63	5.2	$0.09
2030	7.19	2.78	5.2	$0.09
2031	7.59	2.93	5.2	$0.09
2032	7.99	3.08	5.3	$0.09

Table D-1.11. Idaho CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.06	0.03	6.7	$0.11
2014	0.13	0.06	6.8	$0.12
2015	0.19	0.09	6.8	$0.12
2016	0.25	0.12	6.9	$0.12
2017	0.32	0.15	6.9	$0.12
2018	0.38	0.19	6.9	$0.12
2019	0.44	0.22	7.0	$0.12
2020	0.51	0.25	7.0	$0.12
2021	0.57	0.28	7.1	$0.12
2022	0.64	0.31	7.1	$0.13
2023	0.64	0.31	7.1	$0.13
2024	0.64	0.31	7.1	$0.13
2025	0.64	0.31	7.1	$0.13
2026	0.64	0.31	7.1	$0.14
2027	0.64	0.31	7.1	$0.14
2028	0.64	0.31	7.1	$0.14
2029	0.64	0.31	7.1	$0.14
2030	0.64	0.31	7.1	$0.14
2031	0.64	0.31	7.1	$0.14
2032	0.64	0.31	7.1	$0.14

Table D-1.12. Idaho CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.03	0.02	5.9	$0.14
2014	0.05	0.04	5.9	$0.14
2015	0.08	0.05	6.0	$0.14
2016	0.10	0.07	6.0	$0.14
2017	0.13	0.09	6.1	$0.15
2018	0.15	0.11	6.1	$0.15
2019	0.18	0.12	6.1	$0.16
2020	0.20	0.14	6.2	$0.16
2021	0.23	0.16	6.2	$0.16
2022	0.25	0.18	6.3	$0.16
2023	0.25	0.18	6.3	$0.17
2024	0.25	0.18	6.3	$0.17
2025	0.25	0.18	6.3	$0.18
2026	0.25	0.18	6.3	$0.18
2027	0.25	0.18	6.3	$0.18
2028	0.25	0.18	6.3	$0.19
2029	0.25	0.18	6.3	$0.19
2030	0.25	0.18	6.3	$0.19
2031	0.25	0.18	6.3	$0.19
2032	0.25	0.18	6.3	$0.19

Table D-1.13. Idaho CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.14	0.12	6.1	$0.06
2014	0.29	0.23	6.1	$0.06
2015	0.43	0.35	6.1	$0.06
2016	0.57	0.46	6.2	$0.06
2017	0.71	0.57	6.2	$0.07
2018	0.86	0.69	6.3	$0.07
2019	1.00	0.80	6.3	$0.07
2020	1.14	0.91	6.3	$0.07
2021	1.28	1.02	6.4	$0.07
2022	1.43	1.14	6.4	$0.07
2023	1.57	1.25	6.5	$0.07
2024	1.71	1.36	6.5	$0.07
2025	1.85	1.47	6.6	$0.07
2026	2.00	1.58	6.6	$0.07
2027	2.14	1.69	6.6	$0.07
2028	2.28	1.79	6.7	$0.07
2029	2.43	1.90	6.7	$0.07
2030	2.57	2.01	6.8	$0.07
2031	2.71	2.12	6.8	$0.08
2032	2.85	2.23	6.9	$0.08

Table D-1.14. Idaho CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.01	0.01	$0.01
2014	0.02	0.02	$0.01
2015	0.03	0.03	$0.01
2016	0.04	0.04	$0.01
2017	0.05	0.05	$0.01
2018	0.06	0.06	$0.01
2019	0.07	0.07	$0.01
2020	0.09	0.08	$0.01
2021	0.10	0.08	$0.01
2022	0.11	0.09	$0.01
2023	0.12	0.10	$0.01
2024	0.13	0.11	$0.01
2025	0.14	0.12	$0.01
2026	0.15	0.13	$0.01
2027	0.16	0.14	$0.01
2028	0.17	0.15	$0.01
2029	0.18	0.16	$0.01
2030	0.19	0.17	$0.01
2031	0.20	0.18	$0.01
2032	0.21	0.18	$0.01

Table D-1.15. Idaho CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.09	0.04	$0.07
2014	0.17	0.08	$0.07
2015	0.26	0.12	$0.07
2016	0.35	0.16	$0.07
2017	0.43	0.20	$0.07
2018	0.52	0.24	$0.07
2019	0.61	0.28	$0.07
2020	0.69	0.31	$0.07
2021	0.78	0.35	$0.07
2022	0.87	0.39	$0.07
2023	0.96	0.43	$0.07
2024	1.04	0.46	$0.07
2025	1.13	0.50	$0.07
2026	1.22	0.53	$0.07
2027	1.30	0.56	$0.07
2028	1.39	0.60	$0.07
2029	1.48	0.63	$0.07
2030	1.48	0.63	$0.07
2031	1.48	0.63	$0.07
2032	1.48	0.63	$0.07

Table D-1.16. Idaho CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	0.7	0.4
2014	1.5	0.7
2015	2.2	1.1
2016	2.9	1.5
2017	3.6	1.9
2018	4.4	2.2
2019	5.1	2.6
2020	5.8	3.0
2021	6.6	3.3
2022	7.3	3.7
2023	7.9	4.0
2024	8.6	4.3
2025	9.2	4.6
2026	9.8	4.9
2027	10.5	5.2
2028	11.1	5.5
2029	11.8	5.8
2030	12.3	6.1
2031	12.9	6.3
2032	13.4	6.6

Table D-1.17. Oregon CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.89	0.35	4.6	$0.08
2014	1.77	0.71	4.7	$0.08
2015	2.66	1.06	4.7	$0.08
2016	3.55	1.41	4.7	$0.08
2017	4.43	1.76	4.8	$0.08
2018	5.32	2.11	4.8	$0.09
2019	6.21	2.45	4.8	$0.09
2020	7.10	2.80	4.9	$0.09
2021	7.98	3.14	4.9	$0.09
2022	8.87	3.48	4.9	$0.09
2023	9.76	3.83	5.0	$0.09
2024	10.64	4.16	5.0	$0.09
2025	11.53	4.50	5.0	$0.09
2026	12.42	4.84	5.1	$0.09
2027	13.30	5.18	5.1	$0.09
2028	14.19	5.51	5.1	$0.09
2029	15.08	5.84	5.2	$0.09
2030	15.96	6.17	5.2	$0.09
2031	16.85	6.50	5.2	$0.09
2032	17.74	6.83	5.3	$0.09

Table D-1.18. Oregon CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.13	0.06	6.8	$0.12
2014	0.26	0.13	6.8	$0.12
2015	0.40	0.19	6.9	$0.12
2016	0.53	0.26	6.9	$0.12
2017	0.66	0.32	7.0	$0.12
2018	0.79	0.38	7.0	$0.12
2019	0.92	0.45	7.0	$0.13
2020	1.06	0.51	7.1	$0.13
2021	1.19	0.57	7.1	$0.13
2022	1.32	0.64	7.2	$0.13
2023	1.32	0.64	7.2	$0.13
2024	1.32	0.64	7.2	$0.13
2025	1.32	0.64	7.2	$0.13
2026	1.32	0.64	7.2	$0.14
2027	1.32	0.64	7.2	$0.14
2028	1.32	0.64	7.2	$0.14
2029	1.32	0.64	7.2	$0.14
2030	1.32	0.64	7.2	$0.14
2031	1.32	0.64	7.2	$0.14
2032	1.32	0.64	7.2	$0.14

Table D-1.19. Oregon CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.06	0.04	5.9	$0.14
2014	0.12	0.09	6.0	$0.14
2015	0.18	0.13	6.0	$0.14
2016	0.24	0.17	6.0	$0.14
2017	0.31	0.22	6.1	$0.15
2018	0.37	0.26	6.1	$0.16
2019	0.43	0.30	6.2	$0.16
2020	0.49	0.34	6.2	$0.16
2021	0.55	0.38	6.2	$0.17
2022	0.61	0.43	6.3	$0.17
2023	0.61	0.43	6.3	$0.17
2024	0.61	0.43	6.3	$0.18
2025	0.61	0.43	6.3	$0.18
2026	0.61	0.43	6.3	$0.18
2027	0.61	0.43	6.3	$0.18
2028	0.61	0.43	6.3	$0.19
2029	0.61	0.43	6.3	$0.19
2030	0.61	0.43	6.3	$0.19
2031	0.61	0.43	6.3	$0.19
2032	0.61	0.43	6.3	$0.19

Table D-1.20. Oregon CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.27	0.22	6.1	$0.07
2014	0.54	0.44	6.2	$0.07
2015	0.81	0.66	6.2	$0.07
2016	1.08	0.87	6.3	$0.07
2017	1.35	1.09	6.3	$0.07
2018	1.63	1.30	6.3	$0.07
2019	1.90	1.52	6.4	$0.07
2020	2.17	1.73	6.4	$0.07
2021	2.44	1.94	6.5	$0.07
2022	2.71	2.16	6.5	$0.07
2023	2.98	2.37	6.5	$0.07
2024	3.25	2.58	6.6	$0.07
2025	3.52	2.79	6.6	$0.08
2026	3.79	2.99	6.7	$0.08
2027	4.06	3.20	6.7	$0.08
2028	4.34	3.41	6.8	$0.08
2029	4.61	3.61	6.8	$0.08
2030	4.88	3.82	6.9	$0.08
2031	5.15	4.02	6.9	$0.08
2032	5.42	4.23	7.0	$0.08

Table D-1.21. Oregon CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.55	0.49	$0.01
2014	1.10	0.99	$0.01
2015	1.65	1.48	$0.01
2016	2.20	1.97	$0.01
2017	2.75	2.46	$0.01
2018	3.30	2.94	$0.01
2019	3.85	3.42	$0.01
2020	4.40	3.90	$0.01
2021	4.95	4.38	$0.01
2022	5.50	4.86	$0.01
2023	6.05	5.34	$0.01
2024	6.60	5.81	$0.01
2025	7.15	6.28	$0.01
2026	7.70	6.75	$0.01
2027	8.25	7.22	$0.01
2028	8.80	7.69	$0.01
2029	9.35	8.15	$0.01
2030	9.90	8.61	$0.01
2031	10.45	9.07	$0.01
2032	11.00	9.53	$0.01

Table D-1.22. Oregon CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.12	0.06	$0.07
2014	0.25	0.11	$0.07
2015	0.37	0.17	$0.07
2016	0.49	0.22	$0.07
2017	0.61	0.28	$0.07
2018	0.74	0.33	$0.07
2019	0.86	0.39	$0.07
2020	0.98	0.44	$0.07
2021	1.10	0.50	$0.07
2022	1.23	0.55	$0.07
2023	1.35	0.60	$0.07
2024	1.47	0.65	$0.07
2025	1.59	0.70	$0.07
2026	1.72	0.75	$0.07
2027	1.84	0.80	$0.07
2028	1.96	0.84	$0.07
2029	2.08	0.89	$0.07
2030	2.08	0.89	$0.07
2031	2.08	0.89	$0.07
2032	2.08	0.89	$0.07

Table D-1.23. Oregon CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	2.0	1.2
2014	4.0	2.5
2015	6.1	3.7
2016	8.1	4.9
2017	10.1	6.1
2018	12.1	7.3
2019	14.2	8.5
2020	16.2	9.7
2021	18.2	10.9
2022	20.2	12.1
2023	22.1	13.2
2024	23.9	14.3
2025	25.7	15.3
2026	27.6	16.4
2027	29.4	17.5
2028	31.2	18.5
2029	33.0	19.6
2030	34.8	20.6
2031	36.5	21.6
2032	38.2	22.5

Table D-1.24. Utah CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	6.61	2.64	4.6	$0.08
2014	13.22	5.28	4.7	$0.08
2015	19.83	7.90	4.7	$0.08
2016	26.43	10.51	4.7	$0.08
2017	33.04	13.11	4.8	$0.08
2018	39.65	15.70	4.8	$0.08
2019	46.26	18.28	4.8	$0.08
2020	52.87	20.85	4.9	$0.09
2021	59.48	23.41	4.9	$0.09
2022	66.08	25.96	4.9	$0.09
2023	72.69	28.50	5.0	$0.09
2024	79.30	31.03	5.0	$0.09
2025	85.91	33.55	5.0	$0.09
2026	92.52	36.06	5.1	$0.09
2027	99.13	38.56	5.1	$0.09
2028	105.74	41.05	5.1	$0.09
2029	112.34	43.53	5.2	$0.09
2030	118.95	46.00	5.2	$0.09
2031	125.56	48.46	5.2	$0.09
2032	132.17	50.91	5.3	$0.09

Table D-1.25. Utah CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.95	0.46	6.8	$0.12
2014	1.90	0.93	6.8	$0.12
2015	2.85	1.39	6.8	$0.12
2016	3.80	1.85	6.9	$0.12
2017	4.74	2.31	6.9	$0.12
2018	5.69	2.76	7.0	$0.12
2019	6.64	3.22	7.0	$0.12
2020	7.59	3.67	7.1	$0.13
2021	8.54	4.12	7.1	$0.13
2022	9.49	4.57	7.2	$0.13
2023	9.49	4.57	7.2	$0.13
2024	9.49	4.57	7.2	$0.13
2025	9.49	4.57	7.2	$0.13
2026	9.49	4.57	7.2	$0.13
2027	9.49	4.57	7.2	$0.13
2028	9.49	4.57	7.2	$0.13
2029	9.49	4.57	7.2	$0.13
2030	9.49	4.57	7.2	$0.13
2031	9.49	4.57	7.2	$0.13
2032	9.49	4.57	7.2	$0.13

Table D-1.26. Utah CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.48	0.34	6.0	$0.14
2014	0.95	0.67	6.0	$0.14
2015	1.43	1.01	6.1	$0.14
2016	1.90	1.34	6.1	$0.14
2017	2.38	1.67	6.2	$0.15
2018	2.85	2.00	6.2	$0.16
2019	3.33	2.33	6.2	$0.16
2020	3.80	2.66	6.3	$0.16
2021	4.28	2.99	6.3	$0.17
2022	4.75	3.31	6.4	$0.17
2023	4.75	3.31	6.4	$0.17
2024	4.75	3.31	6.4	$0.17
2025	4.75	3.31	6.4	$0.18
2026	4.75	3.31	6.4	$0.18
2027	4.75	3.31	6.4	$0.18
2028	4.75	3.31	6.4	$0.18
2029	4.75	3.31	6.4	$0.19
2030	4.75	3.31	6.4	$0.19
2031	4.75	3.31	6.4	$0.19
2032	4.75	3.31	6.4	$0.19

Table D-1.27. Utah CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	1.90	1.54	6.2	$0.07
2014	3.80	3.07	6.2	$0.07
2015	5.70	4.60	6.2	$0.07
2016	7.60	6.12	6.3	$0.07
2017	9.50	7.63	6.3	$0.07
2018	11.40	9.14	6.4	$0.07
2019	13.29	10.64	6.4	$0.07
2020	15.19	12.14	6.5	$0.07
2021	17.09	13.63	6.5	$0.07
2022	18.99	15.11	6.5	$0.07
2023	20.89	16.59	6.6	$0.07
2024	22.79	18.06	6.6	$0.07
2025	24.69	19.53	6.7	$0.07
2026	26.59	20.99	6.7	$0.08
2027	28.49	22.44	6.8	$0.08
2028	30.39	23.89	6.8	$0.08
2029	32.29	25.33	6.9	$0.08
2030	34.19	26.77	6.9	$0.08
2031	36.09	28.20	6.9	$0.08
2032	37.98	29.63	7.0	$0.08

Table D-1.28. Utah CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.16	0.14	$0.01
2014	0.32	0.29	$0.01
2015	0.48	0.43	$0.01
2016	0.64	0.57	$0.01
2017	0.80	0.71	$0.01
2018	0.96	0.85	$0.01
2019	1.11	0.99	$0.01
2020	1.27	1.13	$0.01
2021	1.43	1.27	$0.01
2022	1.59	1.41	$0.01
2023	1.75	1.55	$0.01
2024	1.91	1.68	$0.01
2025	2.07	1.82	$0.01
2026	2.23	1.96	$0.01
2027	2.39	2.09	$0.01
2028	2.55	2.23	$0.01
2029	2.71	2.36	$0.01
2030	2.87	2.49	$0.01
2031	3.03	2.63	$0.01
2032	3.19	2.76	$0.01

Table D-1.29. Utah CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.20	0.09	$0.07
2014	0.41	0.19	$0.07
2015	0.61	0.28	$0.07
2016	0.81	0.37	$0.07
2017	1.02	0.46	$0.07
2018	1.22	0.56	$0.07
2019	1.43	0.65	$0.07
2020	1.63	0.74	$0.07
2021	1.83	0.83	$0.07
2022	2.04	0.92	$0.07
2023	2.24	1.00	$0.07
2024	2.44	1.08	$0.07
2025	2.65	1.16	$0.07
2026	2.85	1.24	$0.07
2027	3.06	1.32	$0.07
2028	3.26	1.40	$0.07
2029	3.46	1.48	$0.07
2030	3.46	1.48	$0.07
2031	3.46	1.48	$0.07
2032	3.46	1.48	$0.07

Table D-1.30. Utah CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	10.3	5.2
2014	20.6	10.4
2015	30.9	15.6
2016	41.2	20.8
2017	51.5	25.9
2018	61.8	31.0
2019	72.1	36.1
2020	82.4	41.2
2021	92.7	46.2
2022	102.9	51.3
2023	111.8	55.5
2024	120.7	59.7
2025	129.6	63.9
2026	138.4	68.1
2027	147.3	72.3
2028	156.2	76.4
2029	165.0	80.6
2030	173.7	84.6
2031	182.4	88.6
2032	191.0	92.7

Table D-1.31. Washington CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	1.28	0.51	4.6	$0.08
2014	2.57	1.02	4.7	$0.08
2015	3.85	1.53	4.7	$0.08
2016	5.13	2.04	4.7	$0.08
2017	6.42	2.55	4.7	$0.08
2018	7.70	3.05	4.8	$0.08
2019	8.98	3.55	4.8	$0.09
2020	10.27	4.05	4.8	$0.09
2021	11.55	4.55	4.9	$0.09
2022	12.83	5.04	4.9	$0.09
2023	14.12	5.53	4.9	$0.09
2024	15.40	6.03	5.0	$0.09
2025	16.68	6.52	5.0	$0.09
2026	17.97	7.00	5.0	$0.09
2027	19.25	7.49	5.1	$0.09
2028	20.53	7.97	5.1	$0.09
2029	21.82	8.45	5.1	$0.09
2030	23.10	8.93	5.2	$0.09
2031	24.38	9.41	5.2	$0.09
2032	25.66	9.89	5.2	$0.09

Table D-1.32. Washington CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.19	0.09	6.8	$0.12
2014	0.39	0.19	6.8	$0.12
2015	0.58	0.28	6.9	$0.12
2016	0.77	0.38	6.9	$0.12
2017	0.96	0.47	6.9	$0.12
2018	1.16	0.56	7.0	$0.12
2019	1.35	0.65	7.0	$0.12
2020	1.54	0.75	7.1	$0.13
2021	1.74	0.84	7.1	$0.13
2022	1.93	0.93	7.2	$0.13
2023	1.93	0.93	7.2	$0.13
2024	1.93	0.93	7.2	$0.13
2025	1.93	0.93	7.2	$0.13
2026	1.93	0.93	7.2	$0.13
2027	1.93	0.93	7.2	$0.14
2028	1.93	0.93	7.2	$0.14
2029	1.93	0.93	7.2	$0.14
2030	1.93	0.93	7.2	$0.14
2031	1.93	0.93	7.2	$0.14
2032	1.93	0.93	7.2	$0.14

Table D-1.33. Washington CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.09	0.07	6.0	$0.14
2014	0.19	0.13	6.0	$0.14
2015	0.28	0.20	6.1	$0.14
2016	0.37	0.26	6.1	$0.14
2017	0.47	0.33	6.1	$0.15
2018	0.56	0.40	6.2	$0.16
2019	0.66	0.46	6.2	$0.16
2020	0.75	0.52	6.3	$0.16
2021	0.84	0.59	6.3	$0.17
2022	0.94	0.65	6.4	$0.17
2023	0.94	0.65	6.4	$0.17
2024	0.94	0.65	6.4	$0.17
2025	0.94	0.65	6.4	$0.17
2026	0.94	0.65	6.4	$0.18
2027	0.94	0.65	6.4	$0.18
2028	0.94	0.65	6.4	$0.18
2029	0.94	0.65	6.4	$0.18
2030	0.94	0.65	6.4	$0.18
2031	0.94	0.65	6.4	$0.18
2032	0.94	0.65	6.4	$0.18

Table D-1.34. Washington CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.18	0.15	6.5	$0.07
2014	0.37	0.30	6.5	$0.08
2015	0.55	0.44	6.6	$0.08
2016	0.73	0.59	6.6	$0.08
2017	0.92	0.74	6.6	$0.08
2018	1.10	0.88	6.7	$0.08
2019	1.28	1.03	6.7	$0.08
2020	1.47	1.17	6.8	$0.08
2021	1.65	1.31	6.8	$0.08
2022	1.83	1.46	6.9	$0.08
2023	2.01	1.60	6.9	$0.08
2024	2.20	1.74	7.0	$0.08
2025	2.38	1.88	7.0	$0.09
2026	2.56	2.02	7.1	$0.09
2027	2.75	2.16	7.1	$0.09
2028	2.93	2.30	7.1	$0.09
2029	3.11	2.44	7.2	$0.09
2030	3.30	2.58	7.2	$0.09
2031	3.48	2.72	7.3	$0.09
2032	3.66	2.86	7.3	$0.09

Table D-1.35. Washington CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.12	0.11	$0.01
2014	0.24	0.21	$0.01
2015	0.36	0.32	$0.01
2016	0.48	0.43	$0.01
2017	0.60	0.53	$0.01
2018	0.71	0.64	$0.01
2019	0.83	0.74	$0.01
2020	0.95	0.85	$0.01
2021	1.07	0.95	$0.01
2022	1.19	1.05	$0.01
2023	1.31	1.16	$0.01
2024	1.43	1.26	$0.01
2025	1.55	1.36	$0.01
2026	1.67	1.46	$0.01
2027	1.79	1.56	$0.01
2028	1.91	1.66	$0.01
2029	2.02	1.76	$0.01
2030	2.14	1.87	$0.01
2031	2.26	1.96	$0.01
2032	2.38	2.06	$0.01

Table D-1.36. Washington CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.03	0.01	$0.07
2014	0.06	0.03	$0.07
2015	0.09	0.04	$0.07
2016	0.12	0.06	$0.07
2017	0.15	0.07	$0.07
2018	0.18	0.08	$0.07
2019	0.21	0.10	$0.07
2020	0.24	0.11	$0.07
2021	0.27	0.12	$0.07
2022	0.30	0.14	$0.07
2023	0.33	0.15	$0.07
2024	0.36	0.16	$0.07
2025	0.39	0.17	$0.07
2026	0.42	0.18	$0.07
2027	0.45	0.20	$0.07
2028	0.48	0.21	$0.07
2029	0.51	0.22	$0.07
2030	0.51	0.22	$0.07
2031	0.51	0.22	$0.07
2032	0.51	0.22	$0.07

Table D-1.37. Washington CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	1.9	0.9
2014	3.8	1.9
2015	5.7	2.8
2016	7.6	3.8
2017	9.5	4.7
2018	11.4	5.6
2019	13.3	6.5
2020	15.2	7.4
2021	17.1	8.4
2022	19.0	9.3
2023	20.6	10.0
2024	22.3	10.8
2025	23.9	11.5
2026	25.5	12.3
2027	27.1	13.0
2028	28.7	13.7
2029	30.3	14.5
2030	31.9	15.2
2031	33.5	15.9
2032	35.1	16.6

Table D-1.38. Wyoming CHP Market Potential – Natural Gas – Reciprocating Engines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.89	0.36	4.7	$0.08
2014	1.78	0.71	4.7	$0.08
2015	2.66	1.06	4.7	$0.08
2016	3.55	1.41	4.7	$0.08
2017	4.44	1.76	4.8	$0.08
2018	5.33	2.11	4.8	$0.09
2019	6.22	2.46	4.8	$0.09
2020	7.11	2.80	4.9	$0.09
2021	7.99	3.15	4.9	$0.09
2022	8.88	3.49	4.9	$0.09
2023	9.77	3.83	5.0	$0.09
2024	10.66	4.17	5.0	$0.09
2025	11.55	4.51	5.0	$0.09
2026	12.44	4.85	5.1	$0.09
2027	13.32	5.18	5.1	$0.09
2028	14.21	5.52	5.1	$0.09
2029	15.10	5.85	5.2	$0.09
2030	15.99	6.18	5.2	$0.09
2031	16.88	6.51	5.2	$0.09
2032	17.76	6.84	5.3	$0.09

Table D-1.39. Wyoming CHP Market Potential – Natural Gas – Microturbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.13	0.06	6.7	$0.12
2014	0.26	0.13	6.8	$0.12
2015	0.40	0.19	6.8	$0.12
2016	0.53	0.26	6.9	$0.12
2017	0.66	0.32	6.9	$0.12
2018	0.79	0.38	7.0	$0.12
2019	0.92	0.45	7.0	$0.12
2020	1.05	0.51	7.1	$0.13
2021	1.19	0.57	7.1	$0.13
2022	1.32	0.63	7.2	$0.13
2023	1.32	0.63	7.2	$0.13
2024	1.32	0.63	7.2	$0.13
2025	1.32	0.63	7.2	$0.13
2026	1.32	0.63	7.2	$0.13
2027	1.32	0.63	7.2	$0.14
2028	1.32	0.63	7.2	$0.14
2029	1.32	0.63	7.2	$0.14
2030	1.32	0.63	7.2	$0.14
2031	1.32	0.63	7.2	$0.14
2032	1.32	0.63	7.2	$0.14

Table D-1.40. Wyoming CHP Market Potential – Natural Gas – Fuel Cells

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.06	0.04	6.0	$0.14
2014	0.12	0.09	6.0	$0.14
2015	0.18	0.13	6.0	$0.14
2016	0.24	0.17	6.1	$0.14
2017	0.30	0.21	6.1	$0.15
2018	0.36	0.26	6.2	$0.16
2019	0.42	0.30	6.2	$0.16
2020	0.48	0.34	6.2	$0.16
2021	0.54	0.38	6.3	$0.17
2022	0.61	0.42	6.3	$0.17
2023	0.61	0.42	6.3	$0.17
2024	0.61	0.42	6.3	$0.17
2025	0.61	0.42	6.3	$0.18
2026	0.61	0.42	6.3	$0.18
2027	0.61	0.42	6.3	$0.18
2028	0.61	0.42	6.3	$0.19
2029	0.61	0.42	6.3	$0.19
2030	0.61	0.42	6.3	$0.19
2031	0.61	0.42	6.3	$0.19
2032	0.61	0.42	6.3	$0.19

Table D-1.41. Wyoming CHP Market Potential – Natural Gas – Gas Turbines

	Installed Capacity (MW)	Annual Energy (aMW)	Net Heat Rate (MMBtu/MWh)	Levelized Cost ($/kWh)
2013	0.30	0.24	6.1	$0.06
2014	0.60	0.48	6.1	$0.06
2015	0.90	0.72	6.2	$0.07
2016	1.20	0.96	6.2	$0.07
2017	1.50	1.20	6.3	$0.07
2018	1.79	1.44	6.3	$0.07
2019	2.09	1.68	6.3	$0.07
2020	2.39	1.91	6.4	$0.07
2021	2.69	2.15	6.4	$0.07
2022	2.99	2.38	6.5	$0.07
2023	3.29	2.61	6.5	$0.07
2024	3.59	2.84	6.6	$0.07
2025	3.89	3.08	6.6	$0.07
2026	4.19	3.31	6.6	$0.07
2027	4.49	3.53	6.7	$0.07
2028	4.79	3.76	6.7	$0.07
2029	5.09	3.99	6.8	$0.08
2030	5.38	4.22	6.8	$0.08
2031	5.68	4.44	6.9	$0.08
2032	5.98	4.67	6.9	$0.08

Table D-1.42. Wyoming CHP Market Potential – Industrial Biomass

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.02	0.02	$0.01
2014	0.05	0.04	$0.01
2015	0.07	0.06	$0.01
2016	0.10	0.09	$0.01
2017	0.12	0.11	$0.01
2018	0.14	0.13	$0.01
2019	0.17	0.15	$0.01
2020	0.19	0.17	$0.01
2021	0.22	0.19	$0.01
2022	0.24	0.21	$0.01
2023	0.26	0.23	$0.01
2024	0.29	0.25	$0.01
2025	0.31	0.27	$0.01
2026	0.34	0.29	$0.01
2027	0.36	0.31	$0.01
2028	0.38	0.33	$0.01
2029	0.41	0.35	$0.01
2030	0.43	0.37	$0.01
2031	0.45	0.39	$0.01
2032	0.48	0.41	$0.01

Table D-1.43. Wyoming CHP Market Potential – Biogas

	Installed Capacity (MW)	Annual Energy (aMW)	Levelized Cost ($/kWh)
2013	0.16	0.08	$0.07
2014	0.33	0.15	$0.07
2015	0.49	0.22	$0.07
2016	0.65	0.30	$0.07
2017	0.82	0.37	$0.07
2018	0.98	0.45	$0.07
2019	1.14	0.52	$0.07
2020	1.31	0.59	$0.07
2021	1.47	0.66	$0.07
2022	1.63	0.74	$0.07
2023	1.80	0.80	$0.07
2024	1.96	0.87	$0.07
2025	2.12	0.93	$0.07
2026	2.29	1.00	$0.07
2027	2.45	1.06	$0.07
2028	2.61	1.13	$0.07
2029	2.78	1.19	$0.07
2030	2.78	1.19	$0.07
2031	2.78	1.19	$0.07
2032	2.78	1.19	$0.07

Table D-1.44. Wyoming CHP Market Potential – Total

	Installed Capacity (MW)	Annual Energy (aMW)
2013	1.6	0.8
2014	3.1	1.6
2015	4.7	2.4
2016	6.3	3.2
2017	7.8	4.0
2018	9.4	4.8
2019	11.0	5.5
2020	12.5	6.3
2021	14.1	7.1
2022	15.7	7.9
2023	17.0	8.5
2024	18.4	9.2
2025	19.8	9.8
2026	21.2	10.5
2027	22.5	11.1
2028	23.9	11.8
2029	25.3	12.4
2030	26.5	13.0
2031	27.7	13.6
2032	28.9	14.2

Table D-1.45. Landfills in PacifiCorp Service Area[1]

Landfill Name	Landfill City	Landfill County	State	Waste In Place (tons)	Landfill Opened	Landfill Closure	Project Status	LFGE Project Type	MW Capacity
Alturas SLF	Alturas	Modoc	CA	33,872		2028	Potential		
Cecilville Disposal Site	Cecilville	Siskiyou	CA	10,000		1994	Potential		
Cedarville LF - East	Cedarville	Modoc	CA	10,000		1993	Potential		
Crescent City SLF	Crescent City	Del Norte	CA	482,866	1977	2006	Potential		
Fort Bidwell LF	Fort Bidwell	Modoc	CA	10,000		1993	Potential		
Happy Camp Solid Waste Disposal site	Happy Camp	Siskiyou	CA	10,000		1996	Potential		
Intermountain Landfill, Inc.	Hat Creek	Shasta	CA	40,500		1993	Potential		
McCloud Community Services District LF	McCloud	Siskiyou	CA	50,000		1995	Potential		
Black Butte Solid Waste Disposal Site	Mount Shasta	Siskiyou	CA	150,000		2003	Potential		
Lava Beds Disposal Site	Tulelake	Siskiyou	CA	10,000		1995	Potential		
Tulelake SLF	Tulelake	Siskiyou	CA	75,000		2001	Potential		
Weed Solid Waste Disposal Site	Weed	Siskiyou	CA	25,000		1995	Potential		
Yreka Solid Waste LF	Yreka	Siskiyou	CA	200,000		2109	Potential		
Bingham County Landfill-Ridge Road	Blackfoot	Bingham	ID		1987	2002	Potential		
Bonneville County Landfill	Idaho Falls	Bonneville	ID		1993		Potential		
Montpelier Canyon Landfill	Montpelier	Bear Lake	ID		1973	2042	Potential		
Bingham County / Fielding / Goshen Landfill	Shelley	Bingham	ID			2000	Potential		
St. Anthony Landfill	St Anthony	Fremont	ID	75,000	1965		Potential		
Circular Butte Sanitary LF	Terreton	Jefferson	ID		1995	2031	Potential		
Franklin County Sanitary Landfill	Preston	Franklin	ID		1968	2007	Candidate		
Dry Creek Landfill	Eagle Point	Jackson	OR	2,000,000	1997	2138	Operational	Recip. Engine	3.2
Finley Buttes Regional Landfill	Boardman	Morrow	OR	4,000,000	1990	2242	Operational	Cogeneration	3.2
Coffin Butte LF	Corvallis	Benton	OR	4,500,000	1978	2053	Operational	Recip. Engine	2.4
Roseburg LF	Roseburg	Douglas	OR	1,600,000	1935	2020	Operational	Recip. Engine	1.8
Klamath Falls LF	Klamath Falls	Klamath	OR	1,000,000	1911	2001	Potential		

[1] Landfill Methane Outreach Program (LMOP), U.S. Environmental Protection Agency, http://www.epa.gov/lmop/documents/xls/lmopdata.xls

Landfills in PacifiCorp Service Area (continued)

Landfill Name	Landfill City	Landfill County	State	Waste In Place (tons)	Landfill Opened	Landfill Closure	Project Status	LFGE Project Type	MW Capacity
Milton-Freewater LF	Milton-Freewater	Umatilla	OR	125,000	1972	2030	Potential		
Pendleton LF		Umatilla	OR	500,000	1972	1997	Potential		
Northern Wasco County LF	The Dalles	Wasco	OR	1,600,000	1972	2107	Candidate		
Davis County Landfill	Layton	Davis	UT	4,309,000	1952	2030	Operational	Recip. Engine	1.1
Weber County LF	Ogden	Weber	UT	3,500,000	1966	1996	Operational	Recip. Engine	1.0
Salt Lake Valley LF	Salt Lake	Salt Lake	UT	11,000,000	1982	2067	Operational	Recip. Engine	3.2
Trans-Jordan LF	South Jordan	Salt Lake	UT	7,272,671	1958	2031	Operational	Recip. Engine	4.8
Blanding LF	Blanding	San Juan	UT	50,780	1956	1995	Potential		
San Juan County/Bluff LF	Bluff	San Juan	UT	1,600	1980	1995	Potential		
Brigham City LF	Brigham	Box Elder	UT	693,000	1960	1995	Potential		
Emery County LF	Castle Dale	Emery	UT	212,184	1983	2024	Potential		
Summit County/Three Mile Canyon LF	Coalville	Summit	UT	358,896	1986	2026	Potential		
Millard County LF	Delta	Millard	UT	67,650	1986	2034	Potential		
Sevier County/Sage Flat LF	Glenwood	Sevier	UT	70,200	1993	2024	Potential		
Green River LF	Green River	Emery	UT	79,205	1965	1995	Potential		
San Juan County/Halls Crossing LF	Halls Crossing	San Juan	UT	9,464	1970	1995	Potential		
Rich County LF	Laketown	Rich	UT	40,688	1981	2030	Potential		
San Juan County/Mexican Hat LF	Mexican Hat	San Juan	UT	1,600	1980	1995	Potential		
Grand County LF	Moab	Grand	UT	76,300	1960	2004	Potential		
City of Monticello LF	Monticello	San Juan	UT	36,000	1960	1995	Potential		
Nephi LF	Nephi	Juab	UT	18,300	1987	2044	Potential		
Payson City LF	Payson	Utah	UT	616,029	1950	2014	Potential		
Carbon County LF	Price	Carbon	UT	280,000	1956	1995	Potential		
Provo LF	Provo	Utah	UT	1,131,000	1963	1991	Potential		
Santaquin County LF	Santaquin	Utah	UT	262,080	1900	1995	Potential		
White Hills Class I LF	Spring City	Sanpete	UT	108,396	1989	2066	Potential		

Landfills in PacifiCorp Service Area (continued)

Landfill Name	Landfill City	Landfill County	State	Waste In Place (tons)	Landfill Opened	Landfill Closure	Project Status	LFGE Project Type	MW Capacity
Tooele Army Depot LF #2	Tooele	Tooele	UT			1995	Potential		
Tremonton LF	Tremonton	Box Elder	UT	184,600	1970	1995	Potential		
Utah County SWSSD LF		Utah	UT	1,707,965	1964	1993	Potential		
Beaver County LF	Beaver	Beaver	UT	107,648	1968	2026	Potential		
Iron County/ Armstrong Pit LF	Cedar City	Iron	UT	44,962	1993	2014	Potential		
Snowville LF	Snowville	Box Elder	UT	8,100	1970	1997	Potential		
ECDC	East Carbon	Carbon	UT		1992	2010	Candidate		
South Utah County SSD/Bayview LF	Elberta	Utah	UT	1,100,000	1991	2106	Candidate		
City of Logan Sanitary Landfill	Logan	Cache	UT	1,400,000	1961	2022	Candidate		
Wasatch Regional Landfill	North Skull Valley	Tooele	UT			2015	Candidate		
Bountiful City Sanitary LF	Woods Cross	Davis	UT	2,171,531	1962	2050	Candidate		
Uintah County/Vernal City LF	Vernal	Uintah	UT	2,773,000	1950	2008	Candidate		
Washington County Landfill	Washington	Washington	UT	1,292,000	1978	2058	Candidate		
Yakima Firing Center	Yakima	Yakima	WA				Potential		
Sudbury Road LF	Walla Walla	Walla Walla	WA	1,102,317	1972	2007	Candidate		
Terrace Heights LF	Yakima	Yakima	WA	3,727,219	1974	2020	Candidate		
Cheyne Road LF	Zillah	Yakima	WA	1,198,976	1968	2040	Candidate		
City of Casper Regional Solid Waste Facility	Casper	Natrona	WY	3,438,356	1978	2040	Potential		

Table D-1.46. CHP-Eligible Farms in PacifiCorp States[2]

Farm Type	Herd Size	California	Idaho	Oregon	Utah	Washington	Wyoming
Dairy	**500 to 999**	681	230	196	112	135	240
	1,000 to 2,499	498	113	71	30	58	84
	2,500 or more	181	59	12	6	14	10
Swine	**2,000 to 4,999**	1	0	0	2	3	0
	5,000 or more	5	1	0	16	0	3

Table D-1.47. CHP-Eligible Wastewater Treatment Facilities in PacifiCorp States[3]

	California	Idaho	Oregon	Utah	Washington	Wyoming
Number of Facilities	63	7	13	0	9	1
Potential Electric Capacity (kW)	50,196	1,513	4,305	0	10,044	122

Table D-1.48. New CHP Installations in PacifiCorp Service Area – 2008-2011[4]

State	City	Facility Name	Application	Year	Prime Mover	Capacity (kW)	Fuel Type
CA	Weed	Roseburg Forest Products	Wood Products	2011	Steam Turbine	10,000	Wood
OR	Cave Junction	Rough & Ready Lumber	Wood Products	2008	Steam Turbine	1,500	Wood
OR	Corvallis	Oregon State University	Colleges/Univ.	2009	Gas Turbine	9,000	Natural Gas
OR	Eugene	Seneca Sawmill	Wood Products	2011	Steam Turbine	18,800	Wood
UT	Magna	Kennecott Utah Copper Refinery	Primary Metals	2010	Gas Turbine	6,000	Natural Gas
UT	Salt Lake City	University of Utah	Colleges/Univ.	2008	Gas Turbine	4,600	Natural Gas
WY	Riverton	Amoco Oil Co.	Energy Management Services	2008	Steam Turbine	350	Waste
Total						*50,250*	

[2] Census of Agriculture, U.S. Department of Agriculture, http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/

[3] Biomass Combined Heat and Power Catalog of Technologies, U.S. Environmental Protection Agency, page 19, http://www.epa.gov/chp/documents/biomass_chp_catalog.pdf

[4] Data from PacifiCorp and Combined Heat and Power Installation Database, ICF International, http://www.eea-inc.com/chpdata/

APPENDIX D-2. SUPPLEMENTAL RESOURCE SUPPLEMENTS: SOLAR PV AND SOLAR WATER HEATERS

Appendix D-2 provides the details behind the potential estimates for solar PV and solar water heaters.

Table D-2.1. Solar PV Technical Potential Results

Cumulative Technical Potential (MW)																				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CA	332	341	351	360	369	379	388	398	407	417	426	436	445	455	464	474	483	492	502	511
ID	570	599	629	659	688	718	747	777	806	836	866	895	925	954	984	1,013	1,043	1,073	1,102	1,132
OR	4,618	4,765	4,911	5,058	5,204	5,351	5,497	5,644	5,790	5,937	6,083	6,230	6,376	6,522	6,669	6,815	6,962	7,108	7,255	7,401
UT	7,291	7,580	7,869	8,158	8,447	8,735	9,024	9,313	9,602	9,891	10,180	10,469	10,758	11,046	11,335	11,624	11,913	12,202	12,491	12,780
WA	1,100	1,132	1,164	1,196	1,228	1,260	1,292	1,324	1,356	1,388	1,420	1,452	1,484	1,516	1,548	1,580	1,612	1,644	1,676	1,708
WY	1,456	1,506	1,555	1,605	1,655	1,705	1,755	1,804	1,854	1,904	1,954	2,003	2,053	2,103	2,153	2,202	2,252	2,302	2,352	2,402
Total	15,367	15,923	16,479	17,035	17,591	18,147	18,703	19,259	19,816	20,372	20,928	21,484	22,040	22,596	23,152	23,709	24,265	24,821	25,377	25,933

Table D-2.2. Solar PV Market Potential Results

Cumulative Market Potential (MW)																				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CA	0.49	0.99	1.48	1.98	2.47	2.97	3.46	3.95	4.45	4.94	5.44	5.93	6.42	6.92	7.41	7.91	8.40	8.90	9.39	9.88
ID	0.00	0.01	0.02	0.04	0.07	0.11	0.16	0.21	0.44	0.67	0.90	1.13	1.36	1.59	1.82	2.05	2.28	2.51	2.74	2.96
OR	7.12	14.24	21.36	28.47	35.59	42.71	49.83	56.95	64.07	71.18	78.30	85.42	92.54	99.66	106.78	113.90	121.01	128.13	135.25	142.37
UT	7.11	18.07	32.24	48.58	65.44	78.57	91.70	104.82	117.95	131.07	144.20	157.32	170.45	183.57	196.70	209.82	222.95	236.07	249.20	262.32
WA	0.00	0.01	0.03	0.06	0.11	0.16	0.23	0.31	0.64	0.98	1.31	1.64	1.97	2.31	2.64	2.97	3.30	3.64	3.97	4.30
WY	0.01	0.02	0.04	0.08	0.14	0.22	0.31	0.42	0.87	1.32	1.77	2.22	2.67	3.12	3.57	4.02	4.47	4.92	5.37	5.82
Total	14.73	33.34	55.18	79.22	103.83	124.74	145.68	166.67	188.42	210.17	231.92	253.67	275.42	297.17	318.92	340.66	362.41	384.16	405.91	427.66
Cumulative Market Potential (aMW)																				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CA	0.08	0.15	0.23	0.31	0.38	0.45	0.53	0.60	0.67	0.74	0.81	0.88	0.95	1.02	1.08	1.15	1.22	1.28	1.34	1.41
ID	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04	0.07	0.11	0.15	0.18	0.22	0.26	0.29	0.33	0.36	0.40	0.43	0.46
OR	1.12	2.23	3.33	4.41	5.49	6.55	7.61	8.65	9.68	10.70	11.71	12.70	13.69	14.67	15.63	16.58	17.52	18.45	19.37	20.28
UT	1.23	3.12	5.54	8.32	11.15	13.31	15.45	17.57	19.66	21.73	23.77	25.80	27.80	29.78	31.73	33.67	35.58	37.46	39.33	41.17
WA	0.00	0.00	0.01	0.01	0.02	0.02	0.04	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.44	0.49	0.54	0.58	0.63
WY	0.00	0.00	0.01	0.02	0.03	0.04	0.06	0.08	0.16	0.24	0.32	0.40	0.48	0.56	0.64	0.72	0.79	0.87	0.94	1.02
Total	2.43	5.51	9.12	13.07	17.08	20.41	23.70	26.98	30.34	33.67	36.97	40.22	43.44	46.63	49.77	52.89	55.96	59.00	62.00	64.97

Table D-2.3. State and Sector Level Solar PV Levelized Cost of Energy Results

California	PV Residential	*Note-no Federal ITC assumed 2017-2032																				
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	4,671	4,625	4,578	4,533	4,487	4,442	4,398	4,354	4,310	4,267	4,225	4,182	4,141	4,099	4,058	4,018	3,977	3,938	3,898	3,859
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.35	$ 0.33	$ 0.32	$ 0.30	$ 0.29	$ 0.28	$ 0.27	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.20	$ 0.19	$ 0.18
	UCT	$ 0.08	$ 0.07	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03

California	PV Commercial	*Note-no Federal ITC assumed 2017-2032																				
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220	0	0	0	0	0
	Generation (kWh)	30,999	30,689	30,382	30,078	29,778	29,480	29,185	28,893	28,604	28,318	28,035	27,755	27,477	27,202	26,930	26,661	26,394	26,131	25,869	25,611
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.32	$ 0.30	$ 0.29	$ 0.28	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.19	$ 0.18	$ 0.17	$ 0.16
	UCT	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Idaho	PV Residential	*Note-no Federal ITC assumed 2017-2032																				
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	4,963	4,914	4,865	4,816	4,768	4,720	4,673	4,626	4,580	4,534	4,489	4,444	4,399	4,355	4,312	4,269	4,226	4,184	4,142	4,101
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.28	$ 0.27	$ 0.26	$ 0.24	$ 0.33	$ 0.31	$ 0.30	$ 0.29	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.18	$ 0.17
	UCT	$ 0.07	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Idaho	PV Commercial	*Note-no Federal ITC assumed 2017-2032																				
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditucom	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220					
	Generation (kWh)	32,386	32,062	31,741	31,424	31,110	30,798	30,490	30,186	29,884	29,585	29,289	28,996	28,706	28,419	28,135	27,854	27,575	27,299	27,026	26,756
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.30	$ 0.29	$ 0.28	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.19	$ 0.18	$ 0.17	$ 0.16	$ 0.16
	UCT	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Oregon	PV Residential	*Note-no Federal ITC assumed 2017-2032																				
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	4,599	4,553	4,507	4,462	4,417	4,373	4,329	4,286	4,243	4,201	4,159	4,117	4,076	4,035	3,995	3,955	3,915	3,876	3,838	3,799
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.30	$ 0.29	$ 0.28	$ 0.26	$ 0.35	$ 0.34	$ 0.32	$ 0.31	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18
	UCT	$ 0.08	$ 0.07	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03

Oregon	PV Commercial	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditucom	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220					
	Generation (kWh)	30,485	30,180	29,878	29,579	29,284	28,991	28,701	28,414	28,130	27,848	27,570	27,294	27,021	26,751	26,484	26,219	25,956	25,697	25,440	25,186
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.32	$ 0.31	$ 0.29	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.23	$ 0.22	$ 0.21	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.17	$ 0.17
	UCT	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Utah	PV Residential	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	5,043	4,993	4,943	4,893	4,844	4,796	4,748	4,700	4,653	4,607	4,561	4,515	4,470	4,425	4,381	4,337	4,294	4,251	4,208	4,166
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.28	$ 0.26	$ 0.25	$ 0.24	$ 0.32	$ 0.31	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.17	$ 0.17
	UCT	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Utah	PV Commercial	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220					
	Generation (kWh)	33,026	32,696	32,369	32,045	31,725	31,408	31,094	30,783	30,475	30,170	29,868	29,570	29,274	28,981	28,691	28,404	28,120	27,839	27,561	27,285
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.17	$ 0.17	$ 0.16	$ 0.15
	UCT	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Washington	PV Residential	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	4,573	4,527	4,482	4,437	4,393	4,349	4,305	4,262	4,219	4,177	4,135	4,094	4,053	4,013	3,973	3,933	3,893	3,855	3,816	3,778
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.30	$ 0.29	$ 0.28	$ 0.27	$ 0.36	$ 0.34	$ 0.33	$ 0.31	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18
	UCT	$ 0.08	$ 0.07	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03

Washington	PV Commercial	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditucom	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220					
	Generation (kWh)	29,961	29,661	29,365	29,071	28,780	28,493	28,208	27,926	27,646	27,370	27,096	26,825	26,557	26,291	26,028	25,768	25,510	25,255	25,003	24,753
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.28	$ 0.27	$ 0.25	$ 0.24	$ 0.33	$ 0.31	$ 0.30	$ 0.29	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.18	$ 0.17
	UCT	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Wyoming	PV Residential	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 4,346	$ 4,146	$ 3,955	$ 3,773	$ 3,600	$ 3,434	$ 3,276	$ 3,125	$ 2,982	$ 2,845	$ 2,714	$ 2,589	$ 2,470	$ 2,356	$ 2,248	$ 2,144	$ 2,046	$ 1,952	$ 1,862	$ 1,776
	Installed Cost	$ 16,080	$ 15,340	$ 14,634	$ 13,961	$ 19,027	$ 18,152	$ 17,317	$ 16,520	$ 15,760	$ 15,035	$ 14,344	$ 13,684	$ 13,054	$ 12,454	$ 11,881	$ 11,335	$ 10,813	$ 10,316	$ 9,841	$ 9,388
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 2,133					
	Generation (kWh)	5,471	5,417	5,363	5,309	5,256	5,203	5,151	5,100	5,049	4,998	4,948	4,899	4,850	4,801	4,753	4,706	4,659	4,612	4,566	4,520
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.30	$ 0.28	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.17	$ 0.17	$ 0.16	$ 0.15
	UCT	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03

Wyoming	PV Commercial	*Note-no Federal ITC assumed 2017-2032																			
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Utility Expenditures	$ 25,939	$ 24,746	$ 23,607	$ 22,521	$ 21,485	$ 20,497	$ 19,554	$ 18,655	$ 17,797	$ 16,978	$ 16,197	$ 15,452	$ 14,741	$ 14,063	$ 13,416	$ 12,799	$ 12,210	$ 11,649	$ 11,113	$ 10,602
	Installed Cost	$ 95,974	$ 91,559	$ 87,347	$ 83,329	$ 113,566	$ 108,342	$ 103,358	$ 98,604	$ 94,068	$ 89,741	$ 85,613	$ 81,675	$ 77,918	$ 74,333	$ 70,914	$ 67,652	$ 64,540	$ 61,571	$ 58,739	$ 56,037
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 14,220					
	Generation (kWh)	35,599	35,243	34,890	34,541	34,196	33,854	33,516	33,180	32,849	32,520	32,195	31,873	31,554	31,239	30,926	30,617	30,311	30,008	29,708	29,411
	LCOE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	TRC	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.27	$ 0.26	$ 0.25	$ 0.24	$ 0.23	$ 0.22	$ 0.21	$ 0.20	$ 0.19	$ 0.18	$ 0.18	$ 0.17	$ 0.16	$ 0.15	$ 0.15	$ 0.14
	UCT	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.02

Table D-2.4. Solar Water Heating (SWH) Market Potential

Cumulative Market Potential (MW)																				
State	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
CA	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	1.1	1.6	2.2	2.7	3.3	3.8	4.4	4.9	5.5	6.0	6.6	7.1
ID	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8
UT	0.0	0.1	0.2	0.4	0.8	1.2	1.6	2.2	4.6	7.0	9.3	11.7	14.1	16.4	18.8	21.2	23.5	25.9	28.3	30.6
WA	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.4	7.2	8.1	8.9	9.7	10.5
WY	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	1.2	1.8	2.4	3.1	3.7	4.3	4.9	5.5	6.2	6.8	7.4	8.0
OR	Not assessed																			
Total	**0.1**	**0.2**	**0.5**	**0.9**	**1.6**	**2.4**	**3.4**	**4.7**	**9.6**	**14.6**	**19.5**	**24.5**	**29.4**	**34.4**	**39.3**	**44.3**	**49.2**	**54.2**	**59.1**	**64.1**
Cumulative Market Potential (aMW)																				
State	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
CA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
ID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5
UT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.3	1.5	1.6	1.7
WA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4
WY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
OR	Not Assessed																			
Total	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.2**	**0.3**	**0.5**	**0.8**	**1.1**	**1.3**	**1.6**	**1.9**	**2.1**	**2.4**	**2.6**	**2.9**	**3.1**	**3.4**

Table D-2.5. State Level Solar Water Heating (SWH) Results

California SWH

Sector	Subsector	Vintage	% of customers	Installed cost	Incremental cost 2012-2016	Incremental Cost 2017 - 2032	Generation (kWh)	Admin Costs	Admin Costs 2012 - 2016	Admin Costs 2012 - 2016	O&M costs	System Life	Utility Rebate Amount 2012 - 2016	Utility Rebate Amount 2017 - 2032	Federal Rebate Amount	Equipment + Admin costs 2012 - 2016	Equipment + Admin costs 2017 - 2032	Performance Degradation	Inflation	Discount Rate
NonRes	health	retrofit and new	0.03%	$ 47,276	$ 33,093.20	$ 47,276.00	16,762	20%	$ 827.33	$ 827.33	$ 236	20	$ 3,309.32	$ 3,309.32	30%	$ 33,921	$ 48,103	1%	1.9%	6.88%
NonRes	lg office	retrofit and new	0.00%		$ -	$ -		20%	$ -		$ -	20	$ -	$ -	30%	$ -		1%	1.9%	6.88%
NonRes	retail	retrofit and new	0.00%		$ -	$ -		20%	$ -		$ -	20	$ -	$ -	30%	$ -		1%	1.9%	6.88%
NonRes	lodging	retrofit and new	0.10%	$ 23,638	$ 16,547	$ 23,638.00	8,704	20%	$ 413.67	$ 413.67	$ 118	20	$ 1,654.66	$ 1,654.66	30%	$ 16,960	$ 24,052	1%	1.9%	6.88%
NonRes	restaurant	retrofit and new	0.24%	$ 27,030	$ 18,921	$ 27,030.00	9,660	20%	$ 473.03	$ 473.03	$ 135	20	$ 1,892.10	$ 1,892.10	30%	$ 19,394	$ 27,503	1%	1.9%	6.88%
NonRes	school	retrofit and new	0.13%	$ 64,236	$ 44,965.20	$ 64,236.00	22,857	20%	$ 1,124.13	$ 1,124.13	$ 321	20	$ 4,496.52	$ 4,496.52	30%	$ 46,089	$ 65,360	1%	1.9%	6.88%
Res	manuf	retrofit and new	16.23%	$ 8,500	$ 5,950	$ 8,500.00	732	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%
Res	MF	retrofit and new	21.60%	$ 3,374	$ 2,362	$ 3,374.33	850	20%	$ 59.05	$ 59.05	$ 40	20	$ 236.20	$ 236.20	30%	$ 2,421	$ 3,433	1%	1.9%	6.88%
Res	SF	retrofit and new	61.67%	$ 8,500	$ 5,950.00	$ 8,500.00	1220	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%

Sector	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Cost	$ 26,745.92	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38	$ 186.38
NonRes	Generation	15,014	14,864	14,713	14,563	14,413	14,263	14,113	13,963	13,813	13,662	13,512	13,362	13,212	13,062	12,912	12,762	12,612	12,461	12,311	12,161
	Cost	$ 5,300.34	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00
Res	Generation	1,197	1,185	1,173	1,161	1,149	1,137	1,125	1,113	1,101	1,089	1,077	1,065	1,053	1,041	1,029	1,017	1,005	993	981	970

Sector		TRC Values	UCT Values
	Cost NPV	$ 28,689.75	$ 3,261.70
NonRes	Generation NPV	$ 158,982.65	$ 158,982.65
	Cost NPV	$ 5,717.52	$ 646.38
Res	Generation NPV	$ 12,674.55	$ 12,674.55

Sector	2012 TRC Levelized Costs	2012 UCT Levelized Cost
NonRes	$0.18	$ 0.02
Res	$0.45	$ 0.05

Number of Installs	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
lg office		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
lg retail		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
lodging		0.00	0.01	0.01	0.02	0.03	0.03	0.04	0.05	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
restaurant		0.01	0.01	0.03	0.04	0.06	0.08	0.09	0.11	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
school		0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
manuf		0.40	0.80	1.80	2.80	4.00	5.20	6.40	7.60	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81
MF		0.53	1.07	2.40	3.73	5.33	6.93	8.52	10.12	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02
SF		1.52	3.04	6.84	10.65	15.21	19.77	24.34	28.90	117.11	117.11	117.11	117.11	117.11	117.11	117.11	117.11	117.11	117.11	117.11	117.11

ft2 of installs	ft2/system	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health	446	0	1	1	2	3	4	5	6	23	23	23	23	23	23	23	23	23	23	23	23
lg office		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lg retail		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lodging	223	1	1	3	4	6	7	9	11	44	44	44	44	44	44	44	44	44	44	44	44
restaurant	50	0	1	1	2	3	4	5	6	23	23	23	23	23	23	23	23	23	23	23	23
school	32	0	0	0	1	1	1	2	2	8	8	8	8	8	8	8	8	8	8	8	8
manuf	255	102	204	459	714	1,020	1,327	1,633	1,939	7,858	7,858	7,858	7,858	7,858	7,858	7,858	7,858	7,858	7,858	7,858	7,858
MF	606	323	646	1,453	2,260	3,228	4,197	5,165	6,134	24,858	24,858	24,858	24,858	24,858	24,858	24,858	24,858	24,858	24,858	24,858	24,858
SF	50	76	152	342	532	760	989	1,217	1,445	5,856	5,856	5,856	5,856	5,856	5,856	5,856	5,856	5,856	5,856	5,856	5,856
TOTAL FT2		502	1,004	2,260	3,515	5,022	6,528	8,035	9,542	38,669	38,669	38,669	38,669	38,669	38,669	38,669	38,669	38,669	38,669	38,669	38,669
TOTAL MW		0.03	0.06	0.14	0.21	0.31	0.40	0.49	0.58	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36

Idaho SWH

Sector	Subsector	Vintage	% of customers	Installed cost	Incremental cost 2012-2016	Incremental Cost 2017 - 2032	Generation (kWh)	Admin Costs	Admin Costs 2012 - 2016	Admin Costs 2012 - 2016	O&M costs	System Life	Utility Rebate Amount 2012 - 2016	Utility Rebate Amount 2017 - 2032	Federal Rebate Amount	Equipment + Admin costs 2012 - 2016	Equipment + Admin costs 2017 - 2032	Performance Degradation	Inflation	Discount Rate
NonRes	health	retrofit and new	0.00%	$ -	$ -	$ -	-	20%	$ -	$ -	$ -	20	$ -	$ -	30%	$ -	$ -	1%	1.9%	6.88%
NonRes	lg office	retrofit and new	0.14%	$ 23,638	$ 16,547	$ 23,638	9,884	20%	$ 413.67	$ 413.67	$ 118	20	$ 1,654.66	$ 1,654.66	30%	$ 16,960	$ 24,052	1%	1.9%	6.88%
NonRes	retail	retrofit and new	0.09%	$ 16,854	$ 11,798	$ 16,854	6,930	20%	$ 294.95	$ 294.95	$ 84	20	$ 1,179.78	$ 1,179.78	30%	$ 12,093	$ 17,149	1%	1.9%	6.88%
NonRes	lodging	retrofit and new	0.05%	$ 23,638.00	$ 16,547	$ 23,638	9648	20%	$ 413.67	$ 413.67	$ 118	20	$ 1,654.66	$ 1,654.66	30%	$ 16,960	$ 24,052	1%	1.9%	6.88%
NonRes	school	retrofit and new	0.13%	$ 54,060	$ 37,842	$ 54,060	21,513	20%	$ 946.05	$ 946.05	$ 270	20	$ 3,784.20	$ 3,784.20	30%	$ 38,788	$ 55,006	1%	1.9%	6.88%
NonRes	restaurant	retrofit and new	0.09%	$ 33,814	$ 23,670	$ 33,814	14,003	20%	$ 591.75	$ 591.75	$ 169	20	$ 2,366.98	$ 2,366.98	30%	$ 24,262	$ 34,406	1%	1.9%	6.88%
Res	manuf	retrofit and new	12.80%	$ 8,500	$ 5,950	$ 8,500	1664	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%
Res	MF	retrofit and new	22.07%	$ 3,374	$ 2,362	$ 3,374	1088	20%	$ 59.05	$ 59.05	$ 40	20	$ 236.20	$ 236.20	30%	$ 2,421	$ 3,433	1%	1.9%	6.88%
Res	SF	retrofit and new	64.63%	$ 8,500	$ 5,950	$ 8,500	1856	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%

Sector	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Cost	$ 23,142.21	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27	$ 161.27
NonRes	Generation	14,717	14,570	14,422	14,275	14,128	13,981	13,834	13,687	13,539	13,392	13,245	13,098	12,951	12,804	12,656	12,509	12,362	12,215	12,068	11,921
	Cost	$ 5,282.91	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00
Res	Generation	1,876	1,857	1,839	1,820	1,801	1,782	1,763	1,745	1,726	1,707	1,688	1,670	1,651	1,632	1,613	1,595	1,576	1,557	1,538	1,520

Sector		TRC Values	UCT Values
	Cost NPV	$ 24,824.13	$ 2,822.22
NonRes	Generation NPV	155,838.15	155,838.15
	Cost NPV	$ 5,700.08	$ 644.26
Res	Generation NPV	19,865.65	19,865.65

Sector	2012 TRC Levelized Costs	2012 UCT Levelized Cost
NonRes	**$0.16**	$ 0.02
Res	**$0.29**	$ 0.03

Number of Installs	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
lg office		0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
retail		0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
lodging		0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
school		0.00	0.01	0.02	0.02	0.03	0.05	0.06	0.07	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
restaurant		0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.05	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
manuf		0.35	0.70	1.56	2.43	3.48	4.52	5.56	6.61	26.77	26.77	26.77	26.77	26.77	26.77	26.77	26.77	26.77	26.77	26.77	26.77
MF		0.60	1.20	2.70	4.20	6.00	7.79	9.59	11.39	46.16	46.16	46.16	46.16	46.16	46.16	46.16	46.16	46.16	46.16	46.16	46.16
SF		1.76	3.51	7.90	12.29	17.55	22.82	28.09	33.35	135.16	135.16	135.16	135.16	135.16	135.16	135.16	135.16	135.16	135.16	135.16	135.16

ft2 of installs	ft2/system	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lg office	223	1	2	4	6	9	11	14	16	66	66	66	66	66	66	66	66	66	66	66	66
retail	159	0	1	2	3	4	5	6	7	29	29	29	29	29	29	29	29	29	29	29	29
lodging	223	0	1	1	2	3	4	4	5	21	21	21	21	21	21	21	21	21	21	21	21
school	50	0	0	1	1	2	2	3	3	13	13	13	13	13	13	13	13	13	13	13	13
restaurant	32	0	0	0	1	1	1	1	1	6	6	6	6	6	6	6	6	6	6	6	6
manuf	319	111	222	499	776	1,109	1,442	1,774	2,107	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540
MF	510	306	612	1,376	2,140	3,058	3,975	4,892	5,809	23,544	23,544	23,544	23,544	23,544	23,544	23,544	23,544	23,544	23,544	23,544	23,544
SF	50	88	176	395	614	878	1,141	1,404	1,668	6,758	6,758	6,758	6,758	6,758	6,758	6,758	6,758	6,758	6,758	6,758	6,758
TOTAL FT2		506	1,012	2,278	3,543	5,062	6,580	8,099	9,618	38,977	38,977	38,977	38,977	38,977	38,977	38,977	38,977	38,977	38,977	38,977	38,977
TOTAL MW		0.03	0.06	0.14	0.22	0.31	0.40	0.49	0.59	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38

Utah SWH

Sector	Subsector	Vintage	% of customers	Installed cost	Incremental cost 2012-2016	Incremental Cost 2017 - 2032	Generation (kWh)	Admin Costs	Admin Costs 2012 - 2016	Admin Costs 2012 - 2016	O&M costs	System Life	Utility Rebate Amount 2012 - 2016	Utility Rebate Amount 2017 - 2032	Federal Rebate Amount	Equipment + Admin costs 2012 - 2016	Equipment + Admin costs 2017 - 2032	Performance Degradation	Inflation	Discount Rate
NonRes	health	retrofit and new	0.03%	$ 13,568	$ 9,498	$ 13,568	6,285	20%	$ 237.44	$ 237.44	$ 68	20	$ 949.76	$ 949.76	30%	$ 9,735	$ 13,805	1%	1.9%	6.88%
NonRes	lg office	retrofit and new	0.35%	$ 16,854	$ 11,798	$ 16,854	7,907	20%	$ 294.95	$ 294.95	$ 84	20	$ 1,179.78	$ 1,179.78	30%	$ 12,093	$ 17,149	1%	1.9%	6.88%
NonRes	retail	retrofit and new	0.27%	$ 13,568	$ 9,498	$ 13,568	6,615	20%	$ 237.44	$ 237.44	$ 68	20	$ 949.76	$ 949.76	30%	$ 9,735	$ 13,805	1%	1.9%	6.88%
NonRes	lodging	retrofit and new	0.05%	$ 16,854	$ 11,798	$ 16,854	8,165	20%	$ 294.95	$ 294.95	$ 84	20	$ 1,179.78	$ 1,179.78	30%	$ 12,093	$ 17,149	1%	1.9%	6.88%
NonRes	school	retrofit and new	0.10%	$ 64,326	$ 45,028	$ 64,326	28,827	20%	$ 1,125.71	$ 1,125.71	$ 322	20	$ 4,502.82	$ 4,502.82	30%	$ 46,154	$ 65,452	1%	1.9%	6.88%
NonRes	restaurant	retrofit and new	0.19%	$ 33,814	$ 23,670	$ 33,814	15,370	20%	$ 591.75	$ 591.75	$ 169	20	$ 2,366.98	$ 2,366.98	30%	$ 24,262	$ 34,406	1%	1.9%	6.88%
Res	manuf	retrofit and new	2.58%	$ 8,500	$ 5,950	$ 8,500	1292	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%
Res	MF	retrofit and new	57.84%	$ 3,374	$ 2,362	$ 3,374	918	20%	$ 59.05	$ 59.05	$ 40	20	$ 236.20	$ 236.20	30%	$ 2,421	$ 3,433	1%	1.9%	6.88%
Res	SF	retrofit and new	38.58%	$ 8,500	$ 5,950	$ 8,500	1,666	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%

Sector	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Cost	$ 17,126.29	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35	$ 119.35
NonRes	Generation	12,182	11,980	11,859	11,738	11,617	11,496	11,375	11,254	11,133	11,012	10,891	10,770	10,649	10,528	10,407	10,286	10,165	10,044	9,923	9,802
	Cost	$ 3,950.07	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00
Res	Generation	1,336	1,331	1,318	1,304	1,291	1,277	1,264	1,250	1,237	1,224	1,210	1,197	1,183	1,170	1,156	1,143	1,129	1,116	1,103	1,089

Sector		TRC Values	UCT Values
	Cost NPV	$ 18,371.00	$ 2,088.57
NonRes	Generation NPV	$ 128,219.35	$ 128,219.35
	Cost NPV	$ 4,367.24	$ 481.72
Res	Generation NPV	$ 14,228.33	$ 14,228.33

Sector	2012 TRC Levelized Costs	2012 UCT Levelized Cost
NonRes	$0.14	$ 0.02
Res	$0.31	$ 0.03

Number of Installs	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
lg office		0.04	0.09	0.19	0.30	0.43	0.56	0.69	0.82	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
lg retail		0.03	0.07	0.15	0.23	0.33	0.43	0.53	0.64	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57
lodging		0.01	0.01	0.03	0.04	0.06	0.08	0.10	0.11	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
school		0.01	0.02	0.06	0.09	0.12	0.16	0.20	0.23	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
restaurant		0.02	0.05	0.11	0.16	0.23	0.30	0.37	0.44	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
manuf		0.31	0.63	1.42	2.20	3.15	4.09	5.03	5.98	24.23	24.23	24.23	24.23	24.23	24.23	24.23	24.23	24.23	24.23	24.23	24.23
MF		7.05	14.09	31.71	49.33	70.47	91.61	112.75	133.89	542.60	542.60	542.60	542.60	542.60	542.60	542.60	542.60	542.60	542.60	542.60	542.60
SF		4.70	9.40	21.15	32.90	47.00	61.10	75.20	89.30	361.89	361.89	361.89	361.89	361.89	361.89	361.89	361.89	361.89	361.89	361.89	361.89

ft2 of installs	ft2/system	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health	128	0	1	2	3	5	6	8	9	37	37	37	37	37	37	37	37	37	37	37	37
lg office	159	7	14	31	48	69	89	110	130	529	529	529	529	529	529	529	529	529	529	529	529
lg retail	128	4	9	19	30	43	56	68	81	329	329	329	329	329	329	329	329	329	329	329	329
lodging	159	1	2	4	7	10	12	15	18	74	74	74	74	74	74	74	74	74	74	74	74
school	50	1	1	3	4	6	8	10	12	47	47	47	47	47	47	47	47	47	47	47	47
restaurant	32	1	1	3	5	7	10	12	14	57	57	57	57	57	57	57	57	57	57	57	57
manuf	606	191	381	858	1,335	1,907	2,479	3,051	3,622	14,681	14,681	14,681	14,681	14,681	14,681	14,681	14,681	14,681	14,681	14,681	14,681
MF	319	2,248	4,496	10,116	15,735	22,479	29,223	35,967	42,711	173,090	173,090	173,090	173,090	173,090	173,090	173,090	173,090	173,090	173,090	173,090	173,090
SF	50	235	470	1,057	1,645	2,350	3,055	3,760	4,465	18,094	18,094	18,094	18,094	18,094	18,094	18,094	18,094	18,094	18,094	18,094	18,094
TOTAL FT2		2,688	5,375	12,094	18,813	26,875	34,938	43,000	51,063	206,938	206,938	206,938	206,938	206,938	206,938	206,938	206,938	206,938	206,938	206,938	206,938
TOTAL MW		0.16	0.33	0.74	1.15	1.64	2.13	2.62	3.11	12.62	12.62	12.62	12.62	12.62	12.62	12.62	12.62	12.62	12.62	12.62	12.62

Washington SWH

Sector	Subsector	Vintage	% of customers	Installed cost	Incremental cost 2012-2016	Incremental Cost 2017 - 2032	Generation (kWh)	Admin Costs	Admin Costs 2012 - 2016	Admin Costs 2012 - 2016	O&M costs	System Life	Utility Rebate Amount 2012 - 2016	Utility Rebate Amount 2017 - 2032	Federal Rebate Amount	Equipment + Admin costs 2012 - 2016	Equipment + Admin costs 2017 - 2032	Performance Degradation	Inflation	Discount Rate
NonRes	health	retrofit and new	0.00%		$ -	$ -		20%	$ -	$ -	$ -	20	$ -	$ -	30%	$ -	$ -	1%	1.9%	6.88%
NonRes	lg office	retrofit and new	0.12%	$ 30,422.00	$ 21,295	$ 30,422	10,492	20%	$ 532.39	$ 532.39	$ 152	20	$ 2,129.54	$ 2,129.54	30%	$ 21,828	$ 30,954	1%	1.9%	6.88%
NonRes	retail	retrofit and new	0.07%	$ 20,246.00	$ 14,172	$ 20,246	7,140	20%	$ 354.31	$ 354.31	$ 101	20	$ 1,417.22	$ 1,417.22	30%	$ 14,527	$ 20,600	1%	1.9%	6.88%
NonRes	lodging	retrofit and new	0.03%	$ 27,030.00	$ 18,921	$ 27,030	9881	20%	$ 473.03	$ 473.03	$ 135	20	$ 1,892.10	$ 1,892.10	30%	$ 19,394	$ 27,503	1%	1.9%	6.88%
NonRes	school	retrofit and new	0.16%	$ 57,452.00	$ 40,216	$ 57,452	20,168	20%	$ 1,005.41	$ 1,005.41	$ 287	20	$ 4,021.64	$ 4,021.64	30%	$ 41,222	$ 58,457	1%	1.9%	6.88%
NonRes	restaurant	retrofit and new	0.22%	$ 33,814.00	$ 23,670	$ 33,814	12,512	20%	$ 591.75	$ 591.75	$ 169	20	$ 2,366.98	$ 2,366.98	30%	$ 24,262	$ 34,406	1%	1.9%	6.88%
Res	manuf	retrofit and new	8.87%	$ 8,500	$ 5,950	$ 8,500	0	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%
Res	MF	retrofit and new	57.14%	$ 3,374	$ 2,362	$ 3,374	735	20%	$ 59.05	$ 59.05	$ 40	20	$ 236.20	$ 236.20	30%	$ 2,421	$ 3,433	1%	1.9%	6.88%
Res	SF	retrofit and new	33.39%	$ 8,500	$ 5,950	$ 8,500	1220	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%

Sector	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Cost	$ 26,956.02	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85	$ 187.85
NonRes	Generation	14,821	14,673	14,525	14,377	14,229	14,080	13,932	13,784	13,636	13,487	13,339	13,191	13,043	12,895	12,746	12,598	12,450	12,302	12,154	12,005
	Cost	$ 3,984.70	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00
Res	Generation	921	912	903	894	885	875	866	857	848	838	829	820	811	802	792	783	774	765	756	746

Sector		TRC Values	UCT Values
	Cost NPV	$ 28,915.13	$ 3,287.32
NonRes	Generation NPV	$ 156,946.37	$ 156,946.37
	Cost NPV	$ 4,401.87	$ 485.94
Res	Generation NPV	$ 9,756.76	$ 9,756.76

Sector	2012 TRC Levelized Costs	2012 UCT Levelized Cost
NonRes	$0.18	$ 0.02
Res	$0.45	$ 0.05

Number of Installs	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
lg office		0.00	0.01	0.02	0.03	0.05	0.06	0.08	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
lg retail		0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
lodging		0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
school		0.01	0.01	0.03	0.05	0.07	0.09	0.11	0.13	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
restaurant		0.01	0.02	0.04	0.06	0.09	0.12	0.14	0.17	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
manuf		0.37	0.74	1.66	2.58	3.68	4.79	5.89	7.00	28.36	28.36	28.36	28.36	28.36	28.36	28.36	28.36	28.36	28.36	28.36	28.36
MF		2.37	4.74	10.67	16.60	23.72	30.83	37.95	45.07	182.63	182.63	182.63	182.63	182.63	182.63	182.63	182.63	182.63	182.63	182.63	182.63
SF		1.39	2.77	6.24	9.70	13.86	18.02	22.18	26.33	106.72	106.72	106.72	106.72	106.72	106.72	106.72	106.72	106.72	106.72	106.72	106.72

ft2 of installs	ft2/system	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lg office	287	1	3	6	10	14	18	22	26	107	107	107	107	107	107	107	107	107	107	107	107
lg retail	191	1	1	3	4	6	7	9	11	44	44	44	44	44	44	44	44	44	44	44	44
lodging	255	0	1	1	2	3	4	5	6	25	25	25	25	25	25	25	25	25	25	25	25
school	50	0	1	2	2	3	4	5	6	26	26	26	26	26	26	26	26	26	26	26	26
restaurant	32	0	1	1	2	3	4	5	5	22	22	22	22	22	22	22	22	22	22	22	22
manuf	542	200	399	898	1,398	1,996	2,595	3,194	3,793	15,373	15,373	15,373	15,373	15,373	15,373	15,373	15,373	15,373	15,373	15,373	15,373
MF	319	757	1,513	3,405	5,296	7,566	9,836	12,106	14,376	58,260	58,260	58,260	58,260	58,260	58,260	58,260	58,260	58,260	58,260	58,260	58,260
SF	50	69	139	312	485	693	901	1,109	1,317	5,336	5,336	5,336	5,336	5,336	5,336	5,336	5,336	5,336	5,336	5,336	5,336
TOTAL FT2		1,029	2,057	4,628	7,200	10,285	13,371	16,456	19,542	79,195	79,195	79,195	79,195	79,195	79,195	79,195	79,195	79,195	79,195	79,195	79,195
TOTAL MW		0.06	0.13	0.28	0.44	0.63	0.82	1.00	1.19	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83

Wyoming SWH

Sector	Subsector	Vintage	% of customers	Installed cost	Incremental cost 2012-2016	Incremental Cost 2017 - 2032	Generation (kWh)	Admin Costs	Admin Costs 2012 - 2016	Admin Costs 2012 - 2016	O&M costs	System Life	Utility Rebate Amount 2012 - 2016	Utility Rebate Amount 2017 - 2032	Federal Rebate Amount	Equipment + Admin costs 2012 - 2016	Equipment + Admin costs 2017 - 2032	Performance Degradation	Inflation	Discount Rate
NonRes	health	retrofit and new	0.08%	$ 13,568	$ 9,497.60	$ 13,568	6,405	20%	$ 237.44	$ 237.44	$ 68	20	$ 949.76	$ 949.76	30%	$ 9,735	$ 13,805	1%	1.9%	6.88%
NonRes	lg office	retrofit and new	0.16%	$ 23,638.00	$ 16,547	$ 23,638	10,340	20%	$ 413.67	$ 413.67	$ 118	20	$ 1,654.66	$ 1,654.66	30%	$ 16,960	$ 24,052	1%	1.9%	6.88%
NonRes	retail	retrofit and new	0.00%		$ -	$ -		20%	$ -	$ -	$ -	20	$ -	$ -	30%	$ -	$ -	1%	1.9%	6.88%
NonRes	lodging	retrofit and new	0.10%	$ 16,854.00	$ 11,798	$ 16,854	7799	20%	$ 294.95	$ 294.95	$ 84	20	$ 1,179.78	$ 1,179.78	30%	$ 12,093	$ 17,149	1%	1.9%	6.88%
NonRes	school	retrofit and new	0.24%	$ 47,276.00	$ 33,093	$ 47,276	20,889	20%	$ 827.33	$ 827.33	$ 236	20	$ 3,309.32	$ 3,309.32	30%	$ 33,921	$ 48,103	1%	1.9%	6.88%
NonRes	restaurant	retrofit and new	0.08%	$ 33,814.00	$ 23,670	$ 33,814	15,210	20%	$ 591.75	$ 591.75	$ 169	20	$ 2,366.98	$ 2,366.98	30%	$ 24,262	$ 34,406	1%	1.9%	6.88%
Res	manuf	retrofit and new	11.30%	$ 8,500	$ 5,950	$ 8,500	1541	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%
Res	MF	retrofit and new	46.72%	$ 3,374	$ 2,362	$ 3,374	770	20%	$ 59.05	$ 59.05	$ 40	20	$ 236.20	$ 236.20	30%	$ 2,421	$ 3,433	1%	1.9%	6.88%
Res	SF	retrofit and new	41.32%	$ 8,500	$ 5,950	$ 8,500	1407	20%	$ 148.75	$ 148.75	$ 40	20	$ 595.00	$ 595.00	30%	$ 6,099	$ 8,649	1%	1.9%	6.88%

Sector	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
NonRes	Cost	$ 22,358.17	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81	$ 155.81
	Generation	15,232	15,080	14,927	14,775	14,623	14,470	14,318	14,166	14,013	13,861	13,709	13,556	13,404	13,252	13,099	12,947	12,795	12,642	12,490	12,338
Res	Cost	$ 4,369.23	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00	$ 40.00
	Generation	1,241	1,228	1,216	1,203	1,191	1,179	1,166	1,154	1,141	1,129	1,117	1,104	1,092	1,079	1,067	1,055	1,042	1,030	1,017	1,005

Sector		TRC Values	UCT Values
NonRes	Cost NPV	$ 23,983.11	$ 2,726.61
	Generation NPV	$ 161,292.74	$ 161,292.74
Res	Cost NPV	$ 4,786.40	$ 532.83
	Generation NPV	$ 13,137.79	$ 13,137.79

Sector	2012 TRC Levelized Costs	2012 UCT Levelized Cost
NonRes	$0.15	$ 0.02
Res	$0.36	$ 0.04

Number of Installs	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health		0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.05	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
lg office		0.01	0.01	0.02	0.04	0.05	0.07	0.08	0.10	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
lg retail		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
lodging		0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
school		0.01	0.01	0.03	0.05	0.07	0.10	0.12	0.14	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
restaurant		0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
manuf		0.35	0.69	1.55	2.42	3.46	4.49	5.53	6.57	26.61	26.61	26.61	26.61	26.61	26.61	26.61	26.61	26.61	26.61	26.61	26.61
MF		1.43	2.86	6.43	10.00	14.28	18.56	22.85	27.13	109.95	109.95	109.95	109.95	109.95	109.95	109.95	109.95	109.95	109.95	109.95	109.95
SF		1.26	2.53	5.68	8.84	12.63	16.42	20.21	24.00	97.24	97.24	97.24	97.24	97.24	97.24	97.24	97.24	97.24	97.24	97.24	97.24

ft2 of installs	ft2/system	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
health	128	0	1	1	2	3	4	5	6	24	24	24	24	24	24	24	24	24	24	24	24
lg office	223	1	2	5	8	11	15	18	21	86	86	86	86	86	86	86	86	86	86	86	86
lg retail		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lodging	159	0	1	2	3	5	6	8	9	37	37	37	37	37	37	37	37	37	37	37	37
school	50	0	1	2	3	4	5	6	7	28	28	28	28	28	28	28	28	28	28	28	28
restaurant	32	0	0	0	1	1	1	1	1	6	6	6	6	6	6	6	6	6	6	6	6
manuf	446	154	308	693	1,079	1,541	2,003	2,466	2,928	11,866	11,866	11,866	11,866	11,866	11,866	11,866	11,866	11,866	11,866	11,866	11,866
MF	319	456	911	2,050	3,189	4,555	5,922	7,288	8,655	35,075	35,075	35,075	35,075	35,075	35,075	35,075	35,075	35,075	35,075	35,075	35,075
SF	50	63	126	284	442	631	821	1,010	1,200	4,862	4,862	4,862	4,862	4,862	4,862	4,862	4,862	4,862	4,862	4,862	4,862
TOTAL FT2		675	1,350	3,038	4,726	6,751	8,777	10,802	12,827	51,984	51,984	51,984	51,984	51,984	51,984	51,984	51,984	51,984	51,984	51,984	51,984
TOTAL MW		0.04	0.08	0.19	0.29	0.41	0.54	0.66	0.78	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17