



MEMORANDUM

To: Nancy Goddard, Pacific Power
From: Eli Morris, Andy Hudson, Elizabeth Applegate, Julian Graybill Brubaker, AEG
Date: November 4, 2024
Re: Washington Portfolio Level Program Cost-Effectiveness Analysis – 2024-2025 Biennium Update

AEG estimated the cost-effectiveness of Pacific Power’s overall energy efficiency portfolio and individual programs in the state of Washington based on Program Year (PY) 2024 and PY2025 costs and savings estimates provided by Pacific Power.¹ The portfolio passes the following cost effectiveness tests: Total Resource Cost Test (TRC), the PacifiCorp Total Resource Cost Test (PTRC), the Utility Cost Test (UCT), and the Participant Cost Test (PCT).

The memo provides analysis inputs and results in the following tables:

- Table 1: Utility Inputs
- Table 2: Portfolio-Level Costs, Nominal - PY2024 and PY2025
- Table 3: Program Costs, Nominal - PY2024 and PY2025
- Table 4: Savings by Program - PY2024 and PY2025
- Table 5: Portfolio-Level Benefit/Cost Ratios - PY2024 and PY2025
- Table 6: Total Portfolio Cost-Effectiveness Results - PY2024 and PY2025
- Table 7: Total Portfolio with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 8: Total Portfolio Cost-Effectiveness Results - PY2024 and PY2025
- Table 9: Total Portfolio with NEIs Cost-Effectiveness Results - PY2024 and PY2025 (Including NEEA)
- Table 10: Benefit/Cost Ratios by Program - PY2024 and PY2025
- Table 11: Home Energy Savings Cost-Effectiveness Results - PY2024 and PY2025
- Table 12: Home Energy Savings with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 13: Home Energy Reports Cost-Effectiveness Results - PY2024 and PY2025
- Table 14: Wattsmart Business Cost-Effectiveness Results - PY2024 and PY2025
- Table 15: Wattsmart Business with NEIs Cost-Effectiveness Results - PY2024 and PY2025

¹ Consistent with Section 480-109-100 (10) (b) of the Washington Administrative Code, the Low-Income Weatherization program is excluded from this analysis.



- Table 16: NEEA Cost-Effectiveness Results - PY2024 and PY2025
- Table 17: Home Energy Savings Non-Energy Impacts - PY2024 and PY2025
- Table 18: Wattsmart Business Non-Energy Impacts - PY2024 and PY2025

The following assumptions were utilized in the analysis:

- **Avoided Costs:** derived from PacifiCorp’s 2023 Integrated Resource Plan (IRP) Preferred Portfolio “W10 SC CETA”, converted into annual values using load shapes from the same IRP.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-230904.
- **Retail Rates:** 2021 rates provided by PacifiCorp and escalated by inflation for future years.

The following tables summarize cost-effectiveness assumptions and results for the Washington portfolio and associated programs.

Table 1: Utility Inputs

Parameter	Value
Discount Rate	6.77%
Residential Line Loss	7.68%
Commercial Line Loss	7.60%
Industrial Line Loss	6.82%
Irrigation Line Loss	7.68%
Residential Energy Rate (\$/kWh)	\$0.094
Commercial Energy Rate (\$/kWh)	\$0.092
Industrial Energy Rate (\$/kWh)	\$0.075
Irrigation Energy Rate (\$/kWh)	\$0.089
Inflation Rate ²	2.27%

² Future rates determined using a 2.27% annual escalator.



Table 2: Portfolio-Level Costs, Nominal - PY2024 and PY2025

Category	PY2024	PY2025
Be wattsmart, Begin at Home	\$71,758	\$73,552
Customer Outreach/Communication	\$250,000	\$250,000
Program Evaluations (& Savings Verification)	\$286,001	\$159,503
Potential Study Update/Analysis	\$120,000	\$25,000
System Support	\$68,416	\$68,416
End Use Load Research	\$25,981	\$33,363
RTF Funding	\$46,100	\$43,400
Total	\$868,256	\$653,233

Table 3: Program Costs, Nominal - PY2024 and PY2025

Program	Program Delivery	Utility Admin	Incentives	Total Utility Budget	Gross Customer Costs	NEIs
Home Energy Savings	\$7,370,954	\$256,172	\$5,743,460	\$13,370,586	\$12,060,303	\$301,071
Home Energy Reports	\$573,502	\$127,782	\$0	\$701,284	\$0	\$0
Wattsmart Business	\$9,373,211	\$818,859	\$18,450,980	\$28,643,050	\$20,557,739	\$1,005,777
NEEA	\$1,947,114	\$20,791	\$0	\$1,967,906	\$0	\$0
Total (excluding Portfolio-Level)	\$19,264,781	\$1,223,605	\$24,194,440	\$44,682,825	\$32,618,043	\$1,306,848

Table 4: Savings by Program - PY2024 and PY2025

Program	Gross kWh Savings at Site	Realization Rate	Adjusted Gross kWh Savings at Site	Net to Gross Ratio	Net kWh Savings at Site	Measure Life
Home Energy Savings	9,201,542	94%	8,647,987	100%	8,647,987	18
Home Energy Reports	8,239,656	100%	8,239,656	100%	8,239,656	1
Wattsmart Business	63,377,880	97%	61,287,786	100%	61,287,786	12
NEEA ³	8,893,892	100%	8,893,892	100%	8,893,892	16
Total Program	89,712,970	97%	87,069,322	100%	87,069,322	12

³ NEEA savings are adjusted to exclude C&S outside CPA potential consistent with PY2024 and PY2025 Business Plan



Table 5: Portfolio-Level Benefit/Cost Ratios - PY2024 and PY2025

Program	PTRC	TRC	UCT	PCT	RIM
Total Portfolio	1.23	1.12	1.33	2.77	0.53
Total Portfolio with NEIs	1.44	1.33	1.33	3.12	0.53
Total Portfolio with NEEA	1.35	1.22	1.44	3.09	0.54
Total Portfolio with NEEA and NEIs	1.55	1.43	1.44	3.44	0.54

Table 6: Total Portfolio Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0848	\$50,970,247	\$62,617,000	\$11,646,753	1.23
Total Resource Cost Test (TRC) No Adder	\$0.0848	\$50,970,247	\$56,924,545	\$5,954,299	1.12
Utility Cost Test (UCT)	\$0.0714	\$42,895,916	\$56,924,545	\$14,028,629	1.33
Participant Cost Test (PCT)		\$31,512,133	\$87,389,440	\$55,877,306	2.77
Rate Impact Test (RIM)		\$106,847,553	\$56,924,545	(\$49,923,008)	0.53
Lifecycle Revenue Impacts (\$/kWh)					\$0.0015874
Discounted Participant Payback (years)					4.14

Table 7: Total Portfolio with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0848	\$50,970,247	\$73,440,593	\$22,470,346	1.44
Total Resource Cost Test (TRC) No Adder	\$0.0848	\$50,970,247	\$67,748,138	\$16,777,891	1.33
Utility Cost Test (UCT)	\$0.0714	\$42,895,916	\$56,924,545	\$14,028,629	1.33
Participant Cost Test (PCT)		\$31,512,133	\$98,213,032	\$66,700,899	3.12
Rate Impact Test (RIM)		\$106,847,553	\$56,924,545	(\$49,923,008)	0.53
Lifecycle Revenue Impacts (\$/kWh)					\$0.0015874
Discounted Participant Payback (years)					3.71

Table 8: Total Portfolio Cost-Effectiveness Results - PY2024 and PY2025 (Including NEEA)

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0769	\$52,874,634	\$71,146,077	\$18,271,443	1.35
Total Resource Cost Test (TRC) No Adder	\$0.0769	\$52,874,634	\$64,678,252	\$11,803,618	1.22
Utility Cost Test (UCT)	\$0.0651	\$44,800,303	\$64,678,252	\$19,877,948	1.44
Participant Cost Test (PCT)		\$31,512,133	\$97,433,456	\$65,921,323	3.09
Rate Impact Test (RIM)		\$118,795,956	\$64,678,252	(\$54,117,704)	0.54
Lifecycle Revenue Impacts (\$/kWh)					\$0.0017649
Discounted Participant Payback (years)					3.82



Table 9: Total Portfolio with NEIs Cost-Effectiveness Results - PY2024 and PY2025 (Including NEEA)

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0769	\$52,874,634	\$81,969,670	\$29,095,036	1.55
Total Resource Cost Test (TRC) No Adder	\$0.0769	\$52,874,634	\$75,501,845	\$22,627,211	1.43
Utility Cost Test (UCT)	\$0.0651	\$44,800,303	\$64,678,252	\$19,877,948	1.44
Participant Cost Test (PCT)		\$31,512,133	\$108,257,049	\$76,744,916	3.44
Rate Impact Test (RIM)		\$118,795,956	\$64,678,252	(\$54,117,704)	0.54
Lifecycle Revenue Impacts (\$/kWh)					\$0.0017649
Discounted Participant Payback (years)					3.45

Table 10: Benefit/Cost Ratios by Program - PY2024 and PY2025

Program	PTRC	TRC	UCT	PCT	RIM
Home Energy Savings	0.47	0.42	0.62	1.37	0.34
Home Energy Savings with NEIs	0.64	0.59	0.62	1.65	0.34
Home Energy Reports	1.63	1.48	1.48	Pass ⁴	0.68
Wattsmart Business	1.77	1.61	1.72	3.55	0.59
Wattsmart Business with NEIs	2.02	1.86	1.72	3.93	0.59
NEEA	4.48	4.07	4.07	Pass	0.65

Table 11: Home Energy Savings Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2147	\$19,013,050	\$8,852,197	(\$10,160,853)	0.47
Total Resource Cost Test (TRC) No Adder	\$0.2147	\$19,013,050	\$8,047,451	(\$10,965,598)	0.42
Utility Cost Test (UCT)	\$0.1463	\$12,954,921	\$8,047,451	(\$4,907,470)	0.62
Participant Cost Test (PCT)		\$11,603,858	\$15,917,712	\$4,313,854	1.37
Rate Impact Test (RIM)		\$23,326,904	\$8,047,451	(\$15,279,452)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0003466
Discounted Participant Payback (years)					12.42

⁴ The Participant Cost Test passes, but since there is no cost to participants, which results in a divide by zero error, it is listed as 'Pass' and the participant payback is immediate.



Table 12: Home Energy Savings with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2147	\$19,013,050	\$12,099,284	(\$6,913,765)	0.64
Total Resource Cost Test (TRC) No Adder	\$0.2147	\$19,013,050	\$11,294,539	(\$7,718,510)	0.59
Utility Cost Test (UCT)	\$0.1463	\$12,954,921	\$8,047,451	(\$4,907,470)	0.62
Participant Cost Test (PCT)		\$11,603,858	\$19,164,800	\$7,560,942	1.65
Rate Impact Test (RIM)		\$23,326,904	\$8,047,451	(\$15,279,452)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0003466
Discounted Participant Payback (years)					10.53

Table 13: Home Energy Reports Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0848	\$678,774	\$1,104,831	\$426,057	1.63
Total Resource Cost Test (TRC) No Adder	\$0.0848	\$678,774	\$1,004,391	\$325,618	1.48
Utility Cost Test (UCT)	\$0.0848	\$678,774	\$1,004,391	\$325,618	1.48
Participant Cost Test (PCT)		\$0	\$798,308	\$798,308	Pass
Rate Impact Test (RIM)		\$1,477,082	\$1,004,391	(\$472,690)	0.68
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001807
Discounted Participant Payback (years)					0.00

Table 14: Wattsmart Business Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0591	\$29,791,351	\$52,659,973	\$22,868,621	1.77
Total Resource Cost Test (TRC) No Adder	\$0.0591	\$29,791,351	\$47,872,702	\$18,081,351	1.61
Utility Cost Test (UCT)	\$0.0551	\$27,775,149	\$47,872,702	\$20,097,553	1.72
Participant Cost Test (PCT)		\$19,908,275	\$70,673,419	\$50,765,144	3.55
Rate Impact Test (RIM)		\$80,556,496	\$47,872,702	(\$32,683,793)	0.59
Lifecycle Revenue Impacts (\$/kWh)					\$0.0016428
Discounted Participant Payback (years)					3.39



Table 15: Wattsmart Business with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0591	\$29,791,351	\$60,236,478	\$30,445,126	2.02
Total Resource Cost Test (TRC) No Adder	\$0.0591	\$29,791,351	\$55,449,208	\$25,657,856	1.86
Utility Cost Test (UCT)	\$0.0551	\$27,775,149	\$47,872,702	\$20,097,553	1.72
Participant Cost Test (PCT)		\$19,908,275	\$78,249,924	\$58,341,649	3.93
Rate Impact Test (RIM)		\$80,556,496	\$47,872,702	(\$32,683,793)	0.59
Lifecycle Revenue Impacts (\$/kWh)					\$0.0016428
Discounted Participant Payback (years)					3.02

Table 16: NEEA Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0219	\$1,904,387	\$8,529,078	\$6,624,690	4.48
Total Resource Cost Test (TRC) No Adder	\$0.0219	\$1,904,387	\$7,753,707	\$5,849,320	4.07
Utility Cost Test (UCT)	\$0.0219	\$1,904,387	\$7,753,707	\$5,849,320	4.07
Participant Cost Test (PCT)		\$0	\$10,044,016	\$10,044,016	Pass
Rate Impact Test (RIM)		\$11,948,404	\$7,753,707	(\$4,194,697)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0002314
Discounted Participant Payback (years)					0.00

Table 17: Home Energy Savings Non-Energy Impacts - PY2024 and PY2025

Measure Category	Annual Non-Energy Impacts per Measure	Total Installs	Measure Life	Total Present Value NEIs
Appliances	\$17.27	159	14	\$25,089
Building Shell	\$0.13	401,164	45	\$725,098
Electronics	\$3.05	743	9	\$15,073
HVAC	\$34.15	6,943	17	\$2,393,478
Lighting	\$0.12	11,084	9	\$6,411
Water Heating	\$3.53	112	13	\$3,461
Whole Home	\$15.72	16	39	\$3,628



Table 18: Wattsmart Business Non-Energy Impacts - PY2024 and PY2025

Sector	Measure	Annual Non-Energy Impacts per Measure	Measure Life	Total Present Value NEIs
Commercial	Adaptive Refrigeration Control	\$401	12	\$6,633
Commercial	Additional Measures	\$33,768	15	\$645,792
Commercial	Anti-Sweat Heater Control, SMB	\$19	12	\$319
Commercial	Building Shell	\$0	15	\$0
Commercial	Compressed Air	\$2,307	15	\$42,907
Commercial	DI HPWH, SMB	\$18	18	\$390
Commercial	ECM, SMB	\$1,277	15	\$23,658
Commercial	Energy Management	\$85,741	3	\$467,110
Commercial	Engine Block Heater Controls	\$0	10	\$0
Commercial	Engine Block Heater Controls, SMB	\$0	10	\$0
Commercial	Fast Acting Doors	\$1,390	8	\$17,249
Commercial	Food Service Equipment	\$0	10	\$0
Commercial	HVAC	\$4,287	14	\$141,728
Commercial	Lighting	\$127,980	11	\$2,126,160
Commercial	Motors	\$25,796	15	\$492,942
Commercial	Refrigeration	\$86,234	14	\$1,581,112
Commercial	Small DHP, SMB	\$705	15	\$13,074
Commercial	Smart T-Stat, SMB	\$0	5	\$0
Commercial	Wastewater	\$8,566	15	\$163,680
Industrial	Additional Measures	\$3,294	15	\$62,954
Industrial	Compressed Air	\$3,566	14	\$66,006
Industrial	Custom Capital Projects	\$13,256	15	\$253,541
Industrial	Energy Management	\$17,675	3	\$96,239
Industrial	Farm & Dairy	\$0	11	\$0
Industrial	Lighting	\$54,843	12	\$909,361
Irrigation	Drain for wheel line, hand line, portable main line, pivot, or linear	\$127	6	\$1,261
Irrigation	Gasket for wheel line, hand line, or portable main line	\$546	6	\$5,420
Irrigation	Irrigation Pump VFD	\$1,640	10	\$24,062
Irrigation	Nozzle	\$132	6	\$1,310
Irrigation	Rotating sprinkler	\$626	6	\$7,032
Irrigation	Wheel line leveler	\$95	7	\$1,180
Irrigation	Sprinkler Package - replace MESA	\$3,719	6	\$41,778



MEMORANDUM

To: Nancy Goddard, Pacific Power
From: Eli Morris, Andy Hudson, Elizabeth Applegate, Julian Graybill Brubaker, AEG
Date: October 4, 2024
Re: Washington Home Energy Savings Program Cost-Effectiveness Analysis – 2024-2025 Biennium Update

AEG estimated the cost-effectiveness of Pacific Power’s Home Energy Savings Program in the state of Washington based on Program Year (PY) 2024 and PY2025 costs and savings estimates provided by Pacific Power.¹ The program passes the Participant Cost Test (PCT).

The memo provides analysis inputs and results in the following tables:

- Table 1: Cost-Effectiveness Analysis Inputs
- Table 2: Annual Program Costs, Nominal - PY2024 and PY2025
- Table 3: Annual Savings - PY2024 and PY2025
- Table 4: Benefit/Cost Ratios by Measure Category - PY2024 and PY2025
- Table 5: Home Energy Savings Program Cost-Effectiveness Results - PY2024 and PY2025
- Table 6: Additional Measures Cost-Effectiveness Results - PY2024 and PY2025
- Table 7: Appliances Cost-Effectiveness Results - PY2024 and PY2025
- Table 8: Building Shell Cost-Effectiveness Results - PY2024 and PY2025
- Table 9: Electronics Cost-Effectiveness Results - PY2024 and PY2025
- Table 10: HVAC Cost-Effectiveness Results - PY2024 and PY2025
- Table 11: Lighting Cost-Effectiveness Results - PY2024 and PY2025
- Table 12: Water Heating Cost-Effectiveness Results - PY2024 and PY2025
- Table 13: Whole Home Cost-Effectiveness Results - PY2024 and PY2025
- Table 14: Home Energy Savings Program with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 15: Additional Measures with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 16: Appliances with NEIs Cost-Effectiveness Results - PY2024 and PY2025

¹ Consistent with Section 480-109-100 (10) (b) of the Washington Administrative Code, the Low-Income Weatherization program is excluded from this analysis.



- Table 17: Building Shell with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 18: Electronics with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 19: HVAC with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 20: Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 21: Water Heating with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 22: Water Heating with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 23: Home Energy Savings Non-Energy Impacts - PY2024 and PY2025

The following assumptions were utilized in the analysis:

- **Avoided Costs:** derived from PacifiCorp’s 2023 Integrated Resource Plan (IRP) Preferred Portfolio “W10 SC CETA”, converted into annual values using load shapes from the same IRP.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-230904.
- **Retail Rates:** 2021 rates provided by PacifiCorp and escalated by inflation for future years.

The following tables summarize cost-effectiveness assumptions and results for the Washington Home Energy Savings Program. The cost-effectiveness analysis inputs are shown in Table 1 through Table 3 below:

Table 1: Cost-Effectiveness Analysis Inputs

Parameter	Value
Discount Rate	6.77%
Residential Line Loss	7.68%
Residential Energy Rate (\$/kWh)	\$0.094
Inflation Rate ²	2.27%
Net-to-Gross	100%
Realization Rate	94%

² Future rates determined using a 2.27% annual escalator.



Table 2: Annual Program Costs, Nominal - PY2024 and PY2025

Measure Category	Program Delivery	Utility Admin	Incentives	Total Utility Budget	Gross Customer Costs
Additional Measures	\$17,274	\$677	\$300	\$18,251	\$459
Appliances	\$27,899	\$959	\$34,626	\$63,484	\$25,923
Building Shell	\$150,275	\$5,413	\$267,032	\$422,720	\$960,831
Electronics	\$214,314	\$7,132	\$78,720	\$300,166	\$165,168
HVAC	\$6,750,046	\$234,754	\$5,205,757	\$12,190,557	\$10,709,352
Lighting	\$38,398	\$1,259	\$3,000	\$42,658	\$20,424
Water Heating	\$144,324	\$4,955	\$108,900	\$258,179	\$108,828
Whole Home	\$28,424	\$1,023	\$45,125	\$74,572	\$69,318
Total Program	\$7,370,954	\$256,172	\$5,743,460	\$13,370,586	\$12,060,303

Table 3: Annual Savings in kWh - PY2024 and PY2025

Measure Category	Gross kWh Savings at Site	Realization Rate	Adjusted Gross kWh Savings at Site	Net to Gross Ratio	Net kWh Savings at Site	Measure Life
Additional Measures	24,823	99%	24,660	100%	24,660	10
Appliances	34,370	100%	34,370	100%	34,370	13
Building Shell	195,601	90%	176,974	100%	176,974	43
Electronics	253,951	93%	236,175	100%	236,175	9
HVAC	8,429,122	94%	7,923,375	100%	7,923,375	18
Lighting	49,239	85%	41,699	100%	41,699	5
Water Heating	177,492	100%	177,492	100%	177,492	13
Whole Home	36,945	90%	33,244	100%	33,244	39
Total Program	9,201,542	94%	8,647,987	100%	8,647,987	18

Table 4 presents the cost-effectiveness results by measure category and the total program with and without non-energy impacts (NEIs). The program is cost-effective from the PCT perspective.



Table 4: Benefit/Cost Ratios by Measure Category - PY2024 and PY2025

Measure Category	PTRC	TRC	UCT	PCT	RIM
Additional Measures	1.73	1.57	1.58	45.67	0.74
Additional Measures (with NEIs)	1.73	1.57	1.58	45.67	0.74
Appliances	0.58	0.52	0.45	2.70	0.29
Appliances (with NEIs)	1.04	0.99	0.45	3.69	0.29
Building Shell	0.20	0.19	0.49	0.64	0.27
Building Shell (with NEIs)	0.96	0.94	0.49	1.52	0.27
Electronics	0.52	0.47	0.61	1.55	0.38
Electronics (with NEIs)	0.62	0.58	0.61	1.79	0.38
HVAC	0.48	0.43	0.63	1.41	0.35
HVAC (with NEIs)	0.62	0.57	0.63	1.64	0.35
Lighting	0.38	0.35	0.48	1.09	0.34
Lighting (with NEIs)	0.47	0.44	0.48	1.36	0.34
Water Heating	0.59	0.54	0.54	2.66	0.32
Water Heating (with NEIs)	0.60	0.55	0.54	2.70	0.32
Whole Home	0.44	0.40	0.53	1.57	0.29
Whole Home (with NEIs)	0.48	0.44	0.53	1.63	0.29
Total Program	0.47	0.42	0.62	1.37	0.34
Total Program (with NEIs)	0.64	0.59	0.62	1.65	0.34

Tables 5 through 13 present detailed cost-effectiveness results for the total program and for each measure category, excluding NEIs.

Table 5: Home Energy Savings Program Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2147	\$19,013,050	\$8,852,197	(\$10,160,853)	0.47
Total Resource Cost Test (TRC) No Adder	\$0.2147	\$19,013,050	\$8,047,451	(\$10,965,598)	0.42
Utility Cost Test (UCT)	\$0.1463	\$12,954,921	\$8,047,451	(\$4,907,470)	0.62
Participant Cost Test (PCT)		\$11,603,858	\$15,917,712	\$4,313,854	1.37
Rate Impact Test (RIM)		\$23,326,904	\$8,047,451	(\$15,279,452)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0003466
Discounted Participant Payback (years)					12.42



Table 6: Additional Measures Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0985	\$17,243	\$29,785	\$12,542	1.73
Total Resource Cost Test (TRC) No Adder	\$0.0985	\$17,243	\$27,077	\$9,834	1.57
Utility Cost Test (UCT)	\$0.0976	\$17,094	\$27,077	\$9,983	1.58
Participant Cost Test (PCT)		\$430	\$19,650	\$19,220	45.67
Rate Impact Test (RIM)		\$36,463	\$27,077	(\$9,385)	0.74
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000012
Discounted Participant Payback (years)					0.22

Table 7: Appliances Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1750	\$53,169	\$30,661	(\$22,508)	0.58
Total Resource Cost Test (TRC) No Adder	\$0.1750	\$53,169	\$27,873	(\$25,296)	0.52
Utility Cost Test (UCT)	\$0.2029	\$61,648	\$27,873	(\$33,774)	0.45
Participant Cost Test (PCT)		\$25,052	\$67,709	\$42,657	2.70
Rate Impact Test (RIM)		\$95,826	\$27,873	(\$67,953)	0.29
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000022
Discounted Participant Payback (years)					4.73

Table 8: Building Shell Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.4333	\$1,068,722	\$218,867	(\$849,855)	0.20
Total Resource Cost Test (TRC) No Adder	\$0.4333	\$1,068,722	\$198,970	(\$869,752)	0.19
Utility Cost Test (UCT)	\$0.1642	\$405,067	\$198,970	(\$206,096)	0.49
Participant Cost Test (PCT)		\$919,031	\$590,298	(\$328,732)	0.64
Rate Impact Test (RIM)		\$739,989	\$198,970	(\$541,019)	0.27
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000110
Discounted Participant Payback (years)					64.75



Table 9: Electronics Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2343	\$380,818	\$197,118	(\$183,700)	0.52
Total Resource Cost Test (TRC) No Adder	\$0.2343	\$380,818	\$179,198	(\$201,620)	0.47
Utility Cost Test (UCT)	\$0.1814	\$294,865	\$179,198	(\$115,667)	0.61
Participant Cost Test (PCT)		\$163,126	\$252,587	\$89,461	1.55
Rate Impact Test (RIM)		\$470,279	\$179,198	(\$291,081)	0.38
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000144
Discounted Participant Payback (years)					5.81

Table 10: HVAC Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2090	\$17,089,155	\$8,163,776	(\$8,925,379)	0.48
Total Resource Cost Test (TRC) No Adder	\$0.2090	\$17,089,155	\$7,421,615	(\$9,667,540)	0.43
Utility Cost Test (UCT)	\$0.1444	\$11,811,649	\$7,421,615	(\$4,390,034)	0.63
Participant Cost Test (PCT)		\$10,305,243	\$14,581,758	\$4,276,515	1.41
Rate Impact Test (RIM)		\$21,365,670	\$7,421,615	(\$13,944,055)	0.35
Lifecycle Revenue Impacts (\$/kWh)					\$0.0004139
Discounted Participant Payback (years)					12.04

Table 11: Lighting Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.3358	\$58,693	\$22,328	(\$36,365)	0.38
Total Resource Cost Test (TRC) No Adder	\$0.3358	\$58,693	\$20,298	(\$38,395)	0.35
Utility Cost Test (UCT)	\$0.2400	\$41,944	\$20,298	(\$21,647)	0.48
Participant Cost Test (PCT)		\$19,558	\$21,402	\$1,843	1.09
Rate Impact Test (RIM)		\$60,536	\$20,298	(\$40,239)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000015
Discounted Participant Payback (years)					4.45



Table 12: Water Heating Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1611	\$250,864	\$147,866	(\$102,998)	0.59
Total Resource Cost Test (TRC) No Adder	\$0.1611	\$250,864	\$134,424	(\$116,440)	0.54
Utility Cost Test (UCT)	\$0.1612	\$251,117	\$134,424	(\$116,694)	0.54
Participant Cost Test (PCT)		\$105,356	\$280,443	\$175,088	2.66
Rate Impact Test (RIM)		\$425,952	\$134,424	(\$291,528)	0.32
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000104
Discounted Participant Payback (years)					4.88

Table 13: Whole Home Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2066	\$94,385	\$41,795	(\$52,590)	0.44
Total Resource Cost Test (TRC) No Adder	\$0.2066	\$94,385	\$37,996	(\$56,389)	0.40
Utility Cost Test (UCT)	\$0.1566	\$71,537	\$37,996	(\$33,541)	0.53
Participant Cost Test (PCT)		\$66,063	\$103,865	\$37,803	1.57
Rate Impact Test (RIM)		\$132,188	\$37,996	(\$94,192)	0.29
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000020
Discounted Participant Payback (years)					23.85

In addition to the energy benefits reported above, the Home Energy Savings Program measures offer significant non-energy impacts (NEIs). Tables 14 through 22 present detailed cost-effectiveness results for the total program and each measure category with the inclusion of NEIs. Table 23 details the non-energy impacts included in this analysis.

Table 14: Home Energy Savings Program with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2147	\$19,013,050	\$12,099,284	(\$6,913,765)	0.64
Total Resource Cost Test (TRC) No Adder	\$0.2147	\$19,013,050	\$11,294,539	(\$7,718,510)	0.59
Utility Cost Test (UCT)	\$0.1463	\$12,954,921	\$8,047,451	(\$4,907,470)	0.62
Participant Cost Test (PCT)		\$11,603,858	\$19,164,800	\$7,560,942	1.65
Rate Impact Test (RIM)		\$23,326,904	\$8,047,451	(\$15,279,452)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0003466
Discounted Participant Payback (years)					10.53



Table 15: Additional Measures with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0985	\$17,243	\$29,785	\$12,542	1.73
Total Resource Cost Test (TRC) No Adder	\$0.0985	\$17,243	\$27,077	\$9,834	1.57
Utility Cost Test (UCT)	\$0.0976	\$17,094	\$27,077	\$9,983	1.58
Participant Cost Test (PCT)		\$430	\$19,650	\$19,220	45.67
Rate Impact Test (RIM)		\$36,463	\$27,077	(\$9,385)	0.74
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000012
Discounted Participant Payback (years)					0.22

Table 16: Appliances with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1750	\$53,169	\$55,418	\$2,249	1.04
Total Resource Cost Test (TRC) No Adder	\$0.1750	\$53,169	\$52,631	(\$538)	0.99
Utility Cost Test (UCT)	\$0.2029	\$61,648	\$27,873	(\$33,774)	0.45
Participant Cost Test (PCT)		\$25,052	\$92,466	\$67,415	3.69
Rate Impact Test (RIM)		\$95,826	\$27,873	(\$67,953)	0.29
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000022
Discounted Participant Payback (years)					3.54

Table 17: Building Shell with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.4333	\$1,068,722	\$1,025,608	(\$43,114)	0.96
Total Resource Cost Test (TRC) No Adder	\$0.4333	\$1,068,722	\$1,005,711	(\$63,011)	0.94
Utility Cost Test (UCT)	\$0.1642	\$405,067	\$198,970	(\$206,096)	0.49
Participant Cost Test (PCT)		\$919,031	\$1,397,039	\$478,008	1.52
Rate Impact Test (RIM)		\$739,989	\$198,970	(\$541,019)	0.27
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000110
Discounted Participant Payback (years)					27.50



Table 18: Electronics with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2343	\$380,818	\$237,027	(\$143,791)	0.62
Total Resource Cost Test (TRC) No Adder	\$0.2343	\$380,818	\$219,107	(\$161,711)	0.58
Utility Cost Test (UCT)	\$0.1814	\$294,865	\$179,198	(\$115,667)	0.61
Participant Cost Test (PCT)		\$163,126	\$292,496	\$129,370	1.79
Rate Impact Test (RIM)		\$470,279	\$179,198	(\$291,081)	0.38
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000144
Discounted Participant Payback (years)					5.02

Table 19: HVAC with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2090	\$17,089,155	\$10,526,960	(\$6,562,196)	0.62
Total Resource Cost Test (TRC) No Adder	\$0.2090	\$17,089,155	\$9,784,798	(\$7,304,357)	0.57
Utility Cost Test (UCT)	\$0.1444	\$11,811,649	\$7,421,615	(\$4,390,034)	0.63
Participant Cost Test (PCT)		\$10,305,243	\$16,944,941	\$6,639,698	1.64
Rate Impact Test (RIM)		\$21,365,670	\$7,421,615	(\$13,944,055)	0.35
Lifecycle Revenue Impacts (\$/kWh)					\$0.0004139
Discounted Participant Payback (years)					10.33

Table 20: Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.3358	\$58,693	\$27,568	(\$31,125)	0.47
Total Resource Cost Test (TRC) No Adder	\$0.3358	\$58,693	\$25,539	(\$33,154)	0.44
Utility Cost Test (UCT)	\$0.2400	\$41,944	\$20,298	(\$21,647)	0.48
Participant Cost Test (PCT)		\$19,558	\$26,643	\$7,084	1.36
Rate Impact Test (RIM)		\$60,536	\$20,298	(\$40,239)	0.34
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000015
Discounted Participant Payback (years)					3.56



Table 21: Water Heating with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1611	\$250,864	\$151,495	(\$99,369)	0.60
Total Resource Cost Test (TRC) No Adder	\$0.1611	\$250,864	\$138,052	(\$112,812)	0.55
Utility Cost Test (UCT)	\$0.1612	\$251,117	\$134,424	(\$116,694)	0.54
Participant Cost Test (PCT)		\$105,356	\$284,072	\$178,716	2.70
Rate Impact Test (RIM)		\$425,952	\$134,424	(\$291,528)	0.32
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000104
Discounted Participant Payback (years)					4.82

Table 22: Whole Home with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.2066	\$94,385	\$45,423	(\$48,962)	0.48
Total Resource Cost Test (TRC) No Adder	\$0.2066	\$94,385	\$41,624	(\$52,761)	0.44
Utility Cost Test (UCT)	\$0.1566	\$71,537	\$37,996	(\$33,541)	0.53
Participant Cost Test (PCT)		\$66,063	\$107,493	\$41,431	1.63
Rate Impact Test (RIM)		\$132,188	\$37,996	(\$94,192)	0.29
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000020
Discounted Participant Payback (years)					23.16

Table 23: Home Energy Savings Non-Energy Impacts - PY2024 and PY2025

Measure Category	Annual Non-Energy Impacts per Measure	Total Installs	Measure Life	Total Present Value NEIs
Appliances	\$17.27	159	14	\$25,089
Building Shell	\$0.13	405,671	45	\$750,984
Electronics	\$3.05	743	9	\$15,073
HVAC	\$34.15	6,943	17	\$2,393,478
Lighting	\$3.48	40	6	\$714
Water Heating	\$3.53	112	13	\$3,461
Whole Home	\$15.72	16	39	\$3,628



MEMORANDUM

To: Nancy Goddard, Pacific Power
From: Eli Morris, Andy Hudson, Elizabeth Applegate, Julian Graybill Brubaker, AEG
Date: October 4, 2024
Re: Washington Home Energy Report Program Cost-Effectiveness Analysis – 2024-2025 Biennium Update

AEG estimated the cost-effectiveness of Pacific Power’s overall energy efficiency portfolio and individual programs in the state of Washington based on Program Year (PY) 2024 and PY2025 costs and savings estimates provided by Pacific Power.¹ The Home Energy Report program passes the following cost effectiveness tests: Total Resource Cost Test (TRC), the PacifiCorp Total Resource Cost Test (PTRC), the Utility Cost Test (UCT), and the Participant Cost Test (PCT).

The memo provides analysis inputs and results in the following tables:

- Table 1: Cost-Effectiveness Analysis Inputs
- Table 2: Annual Program Costs, Nominal - PY2024 and PY2025
- Table 3: Annual Savings - PY2024 and PY2025
- Table 4: HER Benefit/Cost Ratios - PY2024 and PY2025

The following assumptions were utilized in the analysis:

- **Avoided Costs:** derived from PacifiCorp’s 2023 Integrated Resource Plan (IRP) Preferred Portfolio “W10 SC CETA”, converted into annual values using load shapes from the same IRP.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-230904.
- **Retail Rates:** 2021 rates provided by PacifiCorp and escalated by inflation for future years.

The following tables summarize cost-effectiveness assumptions and results for the Washington HER program.

¹ Consistent with Section 480-109-100 (10) (b) of the Washington Administrative Code, the Low-Income Weatherization program is excluded from this analysis.



Table 1: Cost-Effectiveness Analysis Inputs

Parameter	Value
Discount Rate	6.77%
Residential Line Loss	7.68%
Residential Energy Rate (\$/kWh)	\$0.094
Inflation Rate ²	2.27%
Measure Life	1
NTG	100%
Realization Rate	100%

Table 2: Annual Program Costs, Nominal - PY2024 and PY2025

Program Year	Program Delivery	Utility Admin	Incentives	Total Utility Budget
2024	\$283,175	\$63,102	\$0	\$346,277
2025	\$290,327	\$64,680	\$0	\$355,007
Total Program	\$573,502	\$127,782	\$0	\$701,284

Table 3: Annual Savings, Nominal - PY2024 and PY2025

Program Year	Gross kWh Savings at Site	Net kWh Savings at Site	Gross kWh Savings at Generator	Net kWh Savings at Generator
2024	4,498,656	4,498,656	4,843,973	4,843,973
2025	3,741,000	3,741,000	4,028,159	4,028,159
Total Program	8,239,656	8,239,656	8,872,132	8,872,132

Table 4: HER Benefit/Cost Ratios - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0848	\$678,774	\$1,104,831	\$426,057	1.63
Total Resource Cost Test (TRC) No Adder	\$0.0848	\$678,774	\$1,004,391	\$325,618	1.48
Utility Cost Test (UCT)	\$0.0848	\$678,774	\$1,004,391	\$325,618	1.48
Participant Cost Test (PCT)		\$0	\$798,308	\$798,308	Pass ³
Rate Impact Test (RIM)		\$1,477,082	\$1,004,391	(\$472,690)	0.68
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001807
Discounted Participant Payback (years)					0.00

² Future rates determined using a 2.27% annual escalator.

³ The Participant Cost Test passes, but since there is no cost to participants, which results in a divide by zero error, it is listed as 'Pass' and the participant payback is immediate.



MEMORANDUM

To: Nancy Goddard, Pacific Power
From: Eli Morris, Andy Hudson, Elizabeth Applegate, Julian Graybill Brubaker, AEG
Date: October 4, 2024
Re: Washington Wattsmart Business Program Cost-Effectiveness Analysis – 2024-2025 Biennium Update

AEG estimated the cost-effectiveness of Pacific Power's Wattsmart Business Program in the state of Washington based on Program Year (PY) 2024 and PY2025 costs and savings estimates provided by Pacific Power. This memo provides cost-effectiveness results for the Wattsmart Business program. The program passes the following cost effectiveness tests: Total Resource Cost Test (TRC), the PacifiCorp Total Resource Cost Test (PTRC), the Utility Cost Test (UCT), and the Participant Cost Test (PCT).

The memo provides analysis inputs and results in the following tables:

- Table 1: Cost-Effectiveness Analysis Inputs
- Table 2: Annual Program Costs, Nominal - PY2024 and PY2025
- Table 3: Annual Savings - PY2024 and PY2025
- Table 4: Benefit/Cost Ratios by Delivery Channel and Measure Category - PY2024 and PY2025
- Table 5: Wattsmart Business Program Cost-Effectiveness Results - PY2024 and PY2025
- Table 6: Midstream Cost-Effectiveness Results - PY2024 and PY2025
- Table 7: Small Business Cost-Effectiveness Results - PY2024 and PY2025
- Table 8: Cascade Trade Ally/Facilitation Cost-Effectiveness Results - PY2024 and PY2025
- Table 9: Evergreen Trade Ally Cost-Effectiveness Results - PY2024 and PY2025
- Table 10: Midstream - Lighting (without NEIs) Cost-Effectiveness Results - PY2024 and PY2025
- Table 11: Small Business – Anti-Sweat Heater Control, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 12: Small Business – DI HPWH, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 13: Small Business – ECM, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 14: Small Business – Engine Block Heater Controls, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 15: Small Business – Lighting, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 16: Small Business – Small DHP, SMB Cost-Effectiveness Results - PY2024 and PY2025

- Table 17: Small Business – Smart Thermostat, SMB Cost-Effectiveness Results - PY2024 and PY2025
- Table 18: Project Manager / Trade Ally – Adaptive Refrigeration Control Cost-Effectiveness Results - PY2024 and PY2025
- Table 19: Project Manager / Trade Ally – Additional Measures Cost-Effectiveness Results - PY2024 and PY2025
- Table 20: Project Manager / Trade Ally – Compressed Air Cost-Effectiveness Results - PY2024 and PY2025
- Table 21: Project Manager / Trade Ally – Energy Management Cost-Effectiveness Results - PY2024 and PY2025
- Table 22: Project Manager / Trade Ally – Fast Acting Doors Cost-Effectiveness Results - PY2024 and PY2025
- Table 23: Project Manager / Trade Ally – HVAC, Custom Cost-Effectiveness Results - PY2024 and PY2025
- Table 24: Project Manager / Trade Ally – Motors Cost-Effectiveness Results - PY2024 and PY2025
- Table 25: Project Manager / Trade Ally – Refrigeration Cost-Effectiveness Results - PY2024 and PY2025
- Table 26: Project Manager / Trade Ally – Wastewater Cost-Effectiveness Results - PY2024 and PY2025
- Table 27: Project Manager / Trade Ally – Building Shell Cost-Effectiveness Results - PY2024 and PY2025
- Table 28: Project Manager / Trade Ally – Engine Block Heater Controls Cost-Effectiveness Results - PY2024 and PY2025
- Table 29: Project Manager / Trade Ally – Food Service Equipment Cost-Effectiveness Results - PY2024 and PY2025
- Table 30: Project Manager / Trade Ally – Lighting Cost-Effectiveness Results - PY2024 and PY2025
- Table 31: Project Manager / Trade Ally – Custom Capital Projects Cost-Effectiveness Results - PY2024 and PY2025
- Table 32: Project Manager / Trade Ally – Farm & Dairy Cost-Effectiveness Results - PY2024 and PY2025
- Table 33: Project Manager / Trade Ally – Drain for wheel line, hand line, portable main line, pivot, or linear Cost-Effectiveness Results - PY2024 and PY2025
- Table 34: Project Manager / Trade Ally – Gasket for wheel line, hand line, or portable main line Cost-Effectiveness Results - PY2024 and PY2025
- Table 35: Project Manager / Trade Ally – Impact Sprinkler, New or Rebuilt Cost-Effectiveness Results - PY2024 and PY2025
- Table 36: Project Manager / Trade Ally – Irrigation Pump Upgrades Cost-Effectiveness Results - PY2024 and PY2025
- Table 37: Project Manager / Trade Ally – Irrigation Pump VFD Cost-Effectiveness Results - PY2024 and PY2025
- Table 38: Project Manager / Trade Ally – Nozzle Cost-Effectiveness Results - PY2024 and PY2025
- Table 39: Project Manager / Trade Ally – Rotating Sprinkler Cost-Effectiveness Results - PY2024 and PY2025
- Table 40: Project Manager / Trade Ally – Sprinkler Package – replace high pressure to MESA Cost-Effectiveness Results - PY2024 and PY2025
- Table 41: Project Manager / Trade Ally – Sprinkler Package - replace LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025

- Table 42: Project Manager / Trade Ally – Sprinkler Package - replace MESA Cost-Effectiveness Results - PY2024 and PY2025
- Table 43: Project Manager / Trade Ally – Upgrade sprinkler package - high pressure to MESA Cost-Effectiveness Results - PY2024 and PY2025
- Table 44: Project Manager / Trade Ally – Upgrade sprinkler package - high pressure to LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025
- Table 45: Project Manager / Trade Ally – Upgrade sprinkler package - MESA to LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025
- Table 46: Project Manager / Trade Ally – Wheel Line Leveler Cost-Effectiveness Results - PY2024 and PY2025
- Table 47: Midstream – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 48: Small Business – Anti-Sweat Heater Control, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 49: Small Business – DI HPWH, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 50: Small Business – DI ECM, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 51: Small Business – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 52: Small Business – Small DHP, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 53: Project Manager / Trade Ally – Adaptive Refrigeration Control with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 54: Project Manager / Trade Ally – Additional Measures with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 55: Project Manager / Trade Ally – Compressed Air with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 56: Project Manager / Trade Ally – Energy Management with NEIs Cost-Effectiveness Results Cost-Effectiveness Results - PY2024 and PY2025
- Table 57: Project Manager / Trade Ally – Fast Acting Doors with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 58: Project Manager / Trade Ally – HVAC with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 59: Project Manager / Trade Ally – Motors with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 60: Project Manager / Trade Ally – Refrigeration with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 61: Project Manager / Trade Ally – Wastewater with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 62: Project Manager / Trade Ally – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 63: Project Manager / Trade Ally – Custom Capital Projects with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 64: Project Manager / Trade Ally – Drain for wheel line, hand line, portable main line, pivot, or linear with NEIs Cost-Effectiveness Results - PY2024 and PY2025

- Table 65: Project Manager / Trade Ally – Gasket for wheel line, hand line, or portable main line with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 66: Project Manager / Trade Ally – Impact Sprinkler, New or Rebuilt with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 67: Project Manager / Trade Ally – Irrigation Pump VFD with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 68: Project Manager / Trade Ally – Nozzle with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 69: Project Manager / Trade Ally – Rotating Sprinkler with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 70: Project Manager / Trade Ally – Sprinkler Package - replace MESA with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 71: Project Manager / Trade Ally – Wheel Line Leveler with NEIs Cost-Effectiveness Results - PY2024 and PY2025
- Table 72: Wattsmart Business Non-Energy Impacts - PY2024 and PY2025

The following assumptions were utilized in the analysis:

- **Avoided Costs:** derived from PacifiCorp’s 2023 Integrated Resource Plan (IRP) Preferred Portfolio “W10 SC CETA”, converted into annual values using load shapes from the same IRP.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-230904.
- **Retail Rates:** 2021 rates provided by PacifiCorp and escalated by inflation for future years.

The following tables summarize cost-effectiveness assumptions and results for the Washington Wattsmart Business Program. The cost-effectiveness analysis inputs are shown in Table 1 through Table 3 below:

Table 1: Cost-Effectiveness Analysis Inputs

Parameter	Value
Discount Rate	6.77%
Commercial Line Loss	7.60%
Industrial Line Loss	6.82%
Irrigation Line Loss	7.68%
Commercial Energy Rate (\$/kWh)	\$0.091
Industrial Energy Rate (\$/kWh)	\$0.075
Irrigation Energy Rate (\$/kWh)	\$0.089
Inflation Rate ¹	2.27%

¹ Future rates determined using a 2.27% annual escalator.



Table 2: Annual Program Costs, Nominal - PY2024 and PY2025

Delivery Channel	Measure Category	Program Delivery	Utility Admin	Vendor Incentives	Customer Incentives	Total Utility Budget	Gross Customer Costs
Midstream	Lighting	\$61,577	\$4,313	\$0	\$60,220	\$126,109	\$76,382
Project Manager / Trade Ally	Adaptive Refrigeration Control	\$59,637	\$3,804	\$0	\$72,060	\$135,501	\$120,100
Project Manager / Trade Ally	Additional Measures	\$433,497	\$58,176	\$0	\$1,155,000	\$1,646,674	\$1,735,080
Project Manager / Trade Ally	Building Shell	\$32,602	\$2,340	\$0	\$84,600	\$119,542	\$215,650
Project Manager / Trade Ally	Compressed Air	\$429,792	\$44,751	\$0	\$778,370	\$1,252,913	\$1,101,997
Project Manager / Trade Ally	Custom Capital Projects	\$383,908	\$23,918	\$0	\$375,400	\$783,226	\$600,640
Project Manager / Trade Ally	Drain for wheel line, hand line, portable main line, pivot, or linear	\$572	\$36	\$0	\$400	\$1,008	\$1,578
Project Manager / Trade Ally	Energy Management	\$557,410	\$65,276	\$0	\$126,544	\$749,230	\$144,587
Project Manager / Trade Ally	Engine Block Heater Controls	\$47,945	\$3,351	\$0	\$20,250	\$71,546	\$39,059
Project Manager / Trade Ally	Farm & Dairy	\$51,710	\$3,231	\$0	\$55,825	\$110,766	\$73,588
Project Manager / Trade Ally	Fast Acting Doors	\$208,147	\$13,176	\$0	\$228,389	\$449,711	\$352,964
Project Manager / Trade Ally	Food Service Equipment	\$714	\$59	\$0	\$400	\$1,173	\$1,126
Project Manager / Trade Ally	Gasket for wheel line, hand line, or portable main line	\$4,677	\$292	\$0	\$2,400	\$7,369	\$6,588
Project Manager / Trade Ally	HVAC	\$583,830	\$46,676	\$132,013	\$1,407,669	\$2,038,175	\$2,401,519
Project Manager / Trade Ally	Impact sprinkler, New or Rebuilt	\$222	\$14	\$0	\$200	\$436	\$7,888
Project Manager / Trade Ally	Irrigation Pump Upgrades, Custom	\$268,891	\$16,802	\$0	\$303,485	\$589,178	\$540,995
Project Manager / Trade Ally	Irrigation Pump VFD	\$200,383	\$12,535	\$0	\$246,175	\$459,093	\$433,268



Project Manager / Trade Ally	Lighting	\$2,598,591	\$181,085	\$470,000	\$5,364,963	\$8,144,639	\$4,749,558
Project Manager / Trade Ally	Motors	\$583,021	\$76,611	\$0	\$1,498,859	\$2,158,491	\$2,020,690
Project Manager / Trade Ally	Nozzle	\$2,510	\$157	\$0	\$600	\$3,266	\$1,572
Project Manager / Trade Ally	Refrigeration	\$722,783	\$96,916	\$0	\$1,400,000	\$2,219,699	\$1,751,220
Project Manager / Trade Ally	Rotating sprinkler	\$222	\$14	\$0	\$200	\$436	\$7,888
Project Manager / Trade Ally	Sprinkler Package - replace high pressure	\$0	\$0	\$0	\$0	\$0	\$0
Project Manager / Trade Ally	Sprinkler Package - replace LESA/LEPA/MDI	\$0	\$0	\$0	\$0	\$0	\$0
Project Manager / Trade Ally	Sprinkler Package - replace MESA	\$10,499	\$656	\$0	\$5,880	\$17,035	\$47,363
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to MESA	\$5,327	\$333	\$0	\$2,940	\$8,600	\$15,053
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to LESA/LEPA/MDI	\$0	\$0	\$0	\$0	\$0	\$0
Project Manager / Trade Ally	Upgrade sprinkler package - MESA to LESA/LEPA/MDI	\$14,100	\$881	\$0	\$8,800	\$23,781	\$70,400
Project Manager / Trade Ally	Wastewater	\$100,211	\$13,441	\$0	\$242,545	\$356,198	\$327,236
Project Manager / Trade Ally	Wheel line leveler	\$136	\$8	\$0	\$128	\$272	\$1,299
Small Business - Lighting	Lighting	\$1,831,268	\$136,678	\$165,000	\$4,761,616	\$6,729,562	\$3,428,400
Small Business - Non Lighting	Anti-Sweat Heater Control, SMB	\$2,433	\$182	\$0	\$2,600	\$5,214	\$4,504
Small Business - Non Lighting	DI HPWH, SMB	\$2,726	\$204	\$0	\$13,412	\$16,342	\$9,434



Small Business - Non Lighting	ECM, SMB	\$18,289	\$1,361	\$0	\$17,250	\$36,901	\$21,702
Small Business - Non Lighting	Engine Block Heater Controls, SMB	\$116,721	\$8,687	\$0	\$63,200	\$188,608	\$81,821
Small Business - Non Lighting	Small DHP, SMB	\$30,989	\$2,307	\$0	\$102,000	\$135,296	\$146,698
Small Business - Non Lighting	Smart T-Stat, SMB	\$7,873	\$587	\$28,000	\$48,600	\$57,060	\$19,891
Total Program		\$9,373,211	\$818,859	\$795,013	\$18,450,980	\$28,643,050	\$20,557,739



Table 3: Annual Savings - PY2024 and PY2025

Delivery Channel	Measure Category	Gross kWh Savings at Site	Realization Rate	Adjusted Gross kWh Savings at Site	Net to Gross Ratio	Net kWh Savings at Site	Measure Life
Midstream	Lighting	333,752	100%	333,752	100%	333,752	10
Project Manager / Trade Ally	Adaptive Refrigeration Control	295,000	100%	295,000	100%	295,000	12
Project Manager / Trade Ally	Additional Measures	4,500,000	91%	4,113,900	100%	4,113,900	15
Project Manager / Trade Ally	Compressed Air	3,468,000	97%	3,353,977	100%	3,353,977	14
Project Manager / Trade Ally	Energy Management	5,051,238	100%	5,049,918	100%	5,049,918	3
Project Manager / Trade Ally	Fast Acting Doors	1,021,000	100%	1,021,000	100%	1,021,000	8
Project Manager / Trade Ally	HVAC	3,622,412	89%	3,226,946	100%	3,226,946	13
Project Manager / Trade Ally	Motors	5,927,400	92%	5,430,906	100%	5,430,906	15
Project Manager / Trade Ally	Refrigeration	7,500,000	100%	7,466,700	100%	7,466,700	14
Project Manager / Trade Ally	Wastewater	1,040,000	92%	954,720	100%	954,720	15
Project Manager / Trade Ally	Building Shell	181,470	84%	151,709	100%	151,709	15
Project Manager / Trade Ally	Engine Block Heater Controls	259,265	84%	216,745	100%	216,745	10
Project Manager / Trade Ally	Food Service Equipment	4,618	84%	3,860	100%	3,860	10
Project Manager / Trade Ally	Lighting	14,007,601	100%	14,007,601	100%	14,007,601	12
Project Manager / Trade Ally	Custom Capital Projects	1,850,000	84%	1,546,600	100%	1,546,600	15
Project Manager / Trade Ally	Farm & Dairy	250,000	84%	209,000	100%	209,000	11
Project Manager / Trade Ally	Drain for wheel line, hand line, portable main line, pivot, or linear	2,767	100%	2,767	100%	2,767	6



Project Manager / Trade Ally	Gasket for wheel line, hand line, or portable main line	22,610	100%	22,610	100%	22,610	6
Project Manager / Trade Ally	Impact sprinkler, New or Rebuilt	1,074	100%	1,074	100%	1,074	6
Project Manager / Trade Ally	Irrigation Pump Upgrades, Custom	1,300,000	100%	1,300,000	100%	1,300,000	15
Project Manager / Trade Ally	Irrigation Pump VFD	970,000	100%	970,000	100%	970,000	10
Project Manager / Trade Ally	Nozzle	12,133	100%	12,133	100%	12,133	6
Project Manager / Trade Ally	Rotating sprinkler	1,074	100%	1,074	100%	1,074	6
Project Manager / Trade Ally	Sprinkler Package - replace high pressure	0	0%	0	0%	0	0
Project Manager / Trade Ally	Sprinkler Package - replace LESA/LEPA/MDI	0	0%	0	0%	0	0
Project Manager / Trade Ally	Sprinkler Package - replace MESA	50,758	100%	50,758	100%	50,758	6
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to MESA	25,756	100%	25,756	100%	25,756	10
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to LESA/LEPA/MDI	0	0%	0	0%	0	0
Project Manager / Trade Ally	Upgrade sprinkler package - MESA to LESA/LEPA/MDI	68,167	100%	68,167	100%	68,167	10
Project Manager / Trade Ally	Wheel line leveler	656	100%	656	100%	656	7
Small Business - Non Lighting	Anti-Sweat Heater Control, SMB	14,032	84%	11,730	100%	11,730	12
Small Business - Non Lighting	DI HPWH, SMB	15,704	84%	13,128	100%	13,128	18
Small Business - Non Lighting	ECM, SMB	106,593	84%	89,111	100%	89,111	15
Small Business - Non Lighting	Engine Block Heater Controls, SMB	680,698	84%	569,063	100%	569,063	10



Small Business - Lighting	Lighting	10,568,000	100%	10,568,000	100%	10,568,000	12
Small Business - Non Lighting	Small DHP, SMB	180,547	88%	159,243	100%	159,243	15
Small Business - Non Lighting	Smart T-Stat, SMB	45,555	88%	40,179	100%	40,179	5
Total Program		63,377,880	97%	61,287,786	100%	61,287,786	12

Table 4 presents the cost-effectiveness results by delivery channel, measure category and the total program.

Table 4: Benefit/Cost Ratios by Delivery Channel and Measure Category - PY2024 and PY2025

Delivery Channel	Measure Category	PTRC	TRC	UCT	PCT	RIM
Midstream	Lighting	1.76	1.60	1.81	4.42	0.57
Midstream	Lighting (with NEIs)	2.20	2.04	1.81	5.24	0.57
Project Manager / Trade Ally	Adaptive Refrigeration Control	1.53	1.39	1.88	2.89	0.62
Project Manager / Trade Ally	Adaptive Refrigeration Control (with NEIs)	1.57	1.43	1.88	2.94	0.62
Project Manager / Trade Ally	Additional Measures	1.96	1.78	2.41	3.22	0.65
Project Manager / Trade Ally	Additional Measures (with NEIs)	2.29	2.11	2.41	3.65	0.65
Project Manager / Trade Ally	Compressed Air	2.21	2.01	2.53	3.52	0.73
Project Manager / Trade Ally	Compressed Air (with NEIs)	2.28	2.08	2.53	3.62	0.73
Project Manager / Trade Ally	Energy Management	2.55	2.32	2.37	10.31	0.84
Project Manager / Trade Ally	Energy Management (with NEIs)	3.31	3.07	2.37	14.34	0.84
Project Manager / Trade Ally	Fast Acting Doors	1.39	1.26	1.61	2.59	0.64
Project Manager / Trade Ally	Fast Acting Doors (with NEIs)	1.42	1.29	1.61	2.64	0.64
Project Manager / Trade Ally	HVAC	1.01	0.92	1.37	1.90	0.54
Project Manager / Trade Ally	HVAC (with NEIs)	1.06	0.97	1.37	1.96	0.54
Project Manager / Trade Ally	Motors	2.16	1.97	2.44	3.47	0.69
Project Manager / Trade Ally	Motors (with NEIs)	2.47	2.28	2.44	3.88	0.69
Project Manager / Trade Ally	Refrigeration	2.80	2.55	2.95	5.21	0.66
Project Manager / Trade Ally	Refrigeration (with NEIs)	3.46	3.21	2.95	6.18	0.66
Project Manager / Trade Ally	Wastewater	2.19	1.99	2.47	3.94	0.63
Project Manager / Trade Ally	Wastewater (with NEIs)	2.58	2.38	2.47	4.46	0.63
Project Manager / Trade Ally	Building Shell	0.52	0.47	1.00	1.15	0.42
Project Manager / Trade Ally	Engine Block Heater Controls	1.96	1.78	2.25	4.97	0.66
Project Manager / Trade Ally	Food Service Equipment	1.74	1.58	2.56	3.15	0.70
Project Manager / Trade Ally	Lighting	1.53	1.39	1.29	3.69	0.52
Project Manager / Trade Ally	Lighting (with NEIs)	1.92	1.78	1.29	4.31	0.52
Project Manager / Trade Ally	Custom Capital Projects	1.66	1.51	1.95	2.92	0.71



Project Manager / Trade Ally	Custom Capital Projects (with NEIs)	1.92	1.77	1.95	3.36	0.71
Project Manager / Trade Ally	Farm & Dairy	1.54	1.40	1.62	2.77	0.70
Project Manager / Trade Ally	Drain for wheel line, hand line, portable main line, pivot, or linear	0.99	0.90	1.94	1.15	0.81
Project Manager / Trade Ally	Drain for wheel line, hand line, portable main line, pivot, or linear (with NEIs)	1.58	1.49	1.94	1.97	0.81
Project Manager / Trade Ally	Gasket for wheel line, hand line, or portable main line	1.52	1.39	2.17	2.11	0.85
Project Manager / Trade Ally	Gasket for wheel line, hand line, or portable main line (with NEIs)	2.01	1.87	2.17	2.96	0.85
Project Manager / Trade Ally	Impact sprinkler, New or Rebuilt	0.12	0.11	1.96	0.10	0.80
Project Manager / Trade Ally	Impact sprinkler, New or Rebuilt (with NEIs)	1.01	1.00	1.96	1.03	0.80
Project Manager / Trade Ally	Irrigation Pump Upgrades, Custom	2.09	1.90	2.66	3.12	0.80
Project Manager / Trade Ally	Irrigation Pump VFD	1.63	1.48	2.08	2.32	0.78
Project Manager / Trade Ally	Irrigation Pump VFD (with NEIs)	1.66	1.52	2.08	2.38	0.78
Project Manager / Trade Ally	Nozzle	2.23	2.03	2.63	4.32	0.91
Project Manager / Trade Ally	Nozzle (with NEIs)	2.55	2.34	2.63	5.18	0.91
Project Manager / Trade Ally	Rotating sprinkler	0.12	0.11	1.96	0.10	0.80
Project Manager / Trade Ally	Rotating sprinkler (with NEIs)	1.01	1.00	1.96	1.03	0.80
Project Manager / Trade Ally	Sprinkler Package - replace high pressure	0.00	0.00	0.00	0.00	0.00
Project Manager / Trade Ally	Sprinkler Package - replace LESA/LEPA/MDI	0.00	0.00	0.00	0.00	0.00
Project Manager / Trade Ally	Sprinkler Package - replace MESA	0.76	0.69	2.37	0.75	0.87
Project Manager / Trade Ally	Sprinkler Package - replace MESA (with NEIs)	1.50	1.43	2.37	1.66	0.87
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to MESA	1.35	1.22	2.94	1.54	0.88
Project Manager / Trade Ally	Upgrade sprinkler package - high pressure to LESA/LEPA/MDI	0.00	0.00	0.00	0.00	0.00
Project Manager / Trade Ally	Upgrade sprinkler package - MESA to LESA/LEPA/MDI	0.87	0.79	2.82	0.88	0.87
Project Manager / Trade Ally	Wheel line leveler	0.43	0.40	2.09	0.43	0.81
Project Manager / Trade Ally	Wheel line leveler (with NEIs)	1.28	1.24	2.09	1.37	0.81
Small Business - Non Lighting	Anti-Sweat Heater Control, SMB	1.61	1.46	1.98	3.00	0.65
Small Business - Non Lighting	Anti-Sweat Heater Control, SMB (with NEIs)	1.66	1.51	1.98	3.07	0.65
Small Business - Non Lighting	DI HPWH, SMB	1.02	0.92	0.69	3.14	0.35
Small Business - Non Lighting	DI HPWH, SMB (with NEIs)	1.05	0.96	0.69	3.18	0.35
Small Business - Non Lighting	ECM, SMB	2.11	1.92	2.15	5.34	0.59
Small Business - Non Lighting	ECM, SMB (with NEIs)	2.72	2.53	2.15	6.50	0.59
Small Business - Non Lighting	Engine Block Heater Controls, SMB	2.25	2.04	2.24	6.43	0.65
Small Business - Lighting	Lighting	1.63	1.48	1.18	4.27	0.48
Small Business - Lighting	Lighting (with NEIs)	1.65	1.50	1.18	4.30	0.48



Small Business - Non Lighting	Small DHP, SMB	0.86	0.78	1.04	1.89	0.45
Small Business - Non Lighting	Small DHP, SMB (with NEIs)	0.94	0.86	1.04	1.99	0.45
Small Business - Non Lighting	Smart T-Stat, SMB	0.82	0.74	0.37	3.36	0.28
Total Program		1.77	1.61	1.72	3.55	0.59
Total Program (with NEIs)		2.02	1.86	1.72	3.93	0.59

Table 5 presents the Wattsmart Business Program cost-effectiveness results (without NEIs); the program is cost-effective for the PacifiCorp TRC, TRC, UCT and PCT tests.

Table 5: Wattsmart Business Program Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0591	\$29,791,351	\$52,659,973	\$22,868,621	1.77
Total Resource Cost Test (TRC) No Adder	\$0.0591	\$29,791,351	\$47,872,702	\$18,081,351	1.61
Utility Cost Test (UCT)	\$0.0551	\$27,775,149	\$47,872,702	\$20,097,553	1.72
Participant Cost Test (PCT)		\$19,908,275	\$70,673,419	\$50,765,144	3.55
Rate Impact Test (RIM)		\$80,556,496	\$47,872,702	(\$32,683,793)	0.59
Lifecycle Revenue Impacts (\$/kWh)					\$0.0016428
Discounted Participant Payback (years)					3.39

Table 6 through 10 present the PY2024 and PY2025 cost-effectiveness results (without NEIs) for the Delivery Channels, including Midstream, Small Business, and Trade Ally delivery options.

Table 6: Midstream Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0549	\$138,092	\$243,576	\$105,484	1.76
Total Resource Cost Test (TRC) No Adder	\$0.0549	\$138,092	\$221,433	\$83,341	1.60
Utility Cost Test (UCT)	\$0.0486	\$122,392	\$221,433	\$99,041	1.81
Participant Cost Test (PCT)		\$73,997	\$327,435	\$253,437	4.42
Rate Impact Test (RIM)		\$391,529	\$221,433	(\$170,096)	0.57
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000100
Discounted Participant Payback (years)					2.21



Table 7: Small Business Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0598	\$5,667,049	\$9,199,482	\$3,532,433	1.62
Total Resource Cost Test (TRC) No Adder	\$0.0598	\$5,667,049	\$8,363,165	\$2,696,116	1.48
Utility Cost Test (UCT)	\$0.0733	\$6,942,203	\$8,363,165	\$1,420,962	1.20
Participant Cost Test (PCT)		\$3,576,694	\$15,099,159	\$11,522,466	4.22
Rate Impact Test (RIM)		\$17,189,514	\$8,363,165	(\$8,826,349)	0.49
Lifecycle Revenue Impacts (\$/kWh)					\$0.0003505
Discounted Participant Payback (years)					2.82

Table 8: Cascade Trade Ally/Facilitation Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0514	\$13,799,108	\$29,635,983	\$15,836,875	2.15
Total Resource Cost Test (TRC) No Adder	\$0.0514	\$13,799,108	\$26,941,802	\$13,142,695	1.95
Utility Cost Test (UCT)	\$0.0409	\$10,967,162	\$26,941,802	\$15,974,641	2.46
Participant Cost Test (PCT)		\$9,342,816	\$34,523,679	\$25,180,862	3.70
Rate Impact Test (RIM)		\$38,979,970	\$26,941,802	(\$12,038,167)	0.69
Lifecycle Revenue Impacts (\$/kWh)					\$0.0008757
Discounted Participant Payback (years)					3.28

Table 9: Evergreen Trade Ally Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0734	\$10,187,103	\$13,580,932	\$3,393,829	1.33
Total Resource Cost Test (TRC) No Adder	\$0.0734	\$10,187,103	\$12,346,302	\$2,159,199	1.21
Utility Cost Test (UCT)	\$0.0702	\$9,743,392	\$12,346,302	\$2,602,909	1.27
Participant Cost Test (PCT)		\$6,914,767	\$20,723,146	\$13,808,379	3.00
Rate Impact Test (RIM)		\$23,995,482	\$12,346,302	(\$11,649,180)	0.51
Lifecycle Revenue Impacts (\$/kWh)					\$0.0005390
Discounted Participant Payback (years)					4.01



Table 10: Midstream - Lighting (without NEIs) Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0549	\$138,092	\$243,576	\$105,484	1.76
Total Resource Cost Test (TRC) No Adder	\$0.0549	\$138,092	\$221,433	\$83,341	1.60
Utility Cost Test (UCT)	\$0.0486	\$122,392	\$221,433	\$99,041	1.81
Participant Cost Test (PCT)		\$73,997	\$327,435	\$253,437	4.42
Rate Impact Test (RIM)		\$391,529	\$221,433	(\$170,096)	0.57
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000100
Discounted Participant Payback (years)					2.21

Table 11 through Table 17 presents the PY2024 and PY2025 cost-effectiveness results for the Small Business delivery options without NEIs.

Table 11: Small Business - Anti-Sweat Heater Control, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0707	\$6,919	\$11,136	\$4,217	1.61
Total Resource Cost Test (TRC) No Adder	\$0.0707	\$6,919	\$10,124	\$3,205	1.46
Utility Cost Test (UCT)	\$0.0521	\$5,104	\$10,124	\$5,020	1.98
Participant Cost Test (PCT)		\$4,377	\$13,133	\$8,755	3.00
Rate Impact Test (RIM)		\$15,674	\$10,124	(\$5,550)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000004
Discounted Participant Payback (years)					4.00

Table 12: Small Business - DI HPWH, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0868	\$12,139	\$12,331	\$191	1.02
Total Resource Cost Test (TRC) No Adder	\$0.0868	\$12,139	\$11,210	(\$930)	0.92
Utility Cost Test (UCT)	\$0.1154	\$16,133	\$11,210	(\$4,923)	0.69
Participant Cost Test (PCT)		\$9,282	\$29,124	\$19,842	3.14
Rate Impact Test (RIM)		\$31,982	\$11,210	(\$20,772)	0.35
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000007
Discounted Participant Payback (years)					5.74



Table 13: Small Business - ECM, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0470	\$38,837	\$81,892	\$43,056	2.11
Total Resource Cost Test (TRC) No Adder	\$0.0470	\$38,837	\$74,448	\$35,611	1.92
Utility Cost Test (UCT)	\$0.0420	\$34,673	\$74,448	\$39,775	2.15
Participant Cost Test (PCT)		\$20,384	\$108,799	\$88,415	5.34
Rate Impact Test (RIM)		\$127,252	\$74,448	(\$52,804)	0.59
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000029
Discounted Participant Payback (years)					2.81

Table 14: Small Business - Engine Block Heater Controls, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0480	\$194,198	\$436,040	\$241,842	2.25
Total Resource Cost Test (TRC) No Adder	\$0.0480	\$194,198	\$396,400	\$202,202	2.04
Utility Cost Test (UCT)	\$0.0437	\$176,751	\$396,400	\$219,649	2.24
Participant Cost Test (PCT)		\$76,684	\$493,388	\$416,704	6.43
Rate Impact Test (RIM)		\$610,902	\$396,400	(\$214,502)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000175
Discounted Participant Payback (years)					1.55

Table 15: Small Business - Lighting, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0593	\$5,217,649	\$8,489,126	\$3,271,477	1.63
Total Resource Cost Test (TRC) No Adder	\$0.0593	\$5,217,649	\$7,717,388	\$2,499,739	1.48
Utility Cost Test (UCT)	\$0.0742	\$6,526,474	\$7,717,388	\$1,190,913	1.18
Participant Cost Test (PCT)		\$3,308,104	\$14,128,262	\$10,820,159	4.27
Rate Impact Test (RIM)		\$16,037,808	\$7,717,388	(\$8,320,420)	0.48
Lifecycle Revenue Impacts (\$/kWh)					\$0.0004103
Discounted Participant Payback (years)					2.81



Table 16: Small Business – Small DHP, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1151	\$170,087	\$146,718	(\$23,368)	0.86
Total Resource Cost Test (TRC) No Adder	\$0.1151	\$170,087	\$133,380	(\$36,706)	0.78
Utility Cost Test (UCT)	\$0.0868	\$128,169	\$133,380	\$5,211	1.04
Participant Cost Test (PCT)		\$138,782	\$262,432	\$123,650	1.89
Rate Impact Test (RIM)		\$293,737	\$133,380	(\$160,357)	0.45
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000066
Discounted Participant Payback (years)					7.93

Table 17: Small Business – Smart Thermostat, SMB Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1599	\$27,220	\$22,238	(\$4,982)	0.82
Total Resource Cost Test (TRC) No Adder	\$0.1599	\$27,220	\$20,216	(\$7,004)	0.74
Utility Cost Test (UCT)	\$0.3226	\$54,900	\$20,216	(\$34,684)	0.37
Participant Cost Test (PCT)		\$19,082	\$64,021	\$44,940	3.36
Rate Impact Test (RIM)		\$72,160	\$20,216	(\$51,944)	0.28
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000033
Discounted Participant Payback (years)					1.49

Table 18 through Table 46 presents the PY2024 and PY2025 cost-effectiveness results for the Project Manager / Trade Ally delivery options without NEIs.

Table 18: Project Manager / Trade Ally – Adaptive Refrigeration Control Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0725	\$176,811	\$270,641	\$93,830	1.53
Total Resource Cost Test (TRC) No Adder	\$0.0725	\$176,811	\$246,037	\$69,226	1.39
Utility Cost Test (UCT)	\$0.0536	\$130,600	\$246,037	\$115,438	1.88
Participant Cost Test (PCT)		\$115,528	\$333,450	\$217,921	2.89
Rate Impact Test (RIM)		\$394,732	\$246,037	(\$148,695)	0.62
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000101
Discounted Participant Payback (years)					4.16



Table 19: Project Manager / Trade Ally – Additional Measures Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0547	\$2,156,783	\$4,224,296	\$2,067,512	1.96
Total Resource Cost Test (TRC) No Adder	\$0.0547	\$2,156,783	\$3,840,269	\$1,683,485	1.78
Utility Cost Test (UCT)	\$0.0405	\$1,595,498	\$3,840,269	\$2,244,771	2.41
Participant Cost Test (PCT)		\$1,680,481	\$5,417,752	\$3,737,271	3.22
Rate Impact Test (RIM)		\$5,894,055	\$3,840,269	(\$2,053,786)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001324
Discounted Participant Payback (years)					4.65

Table 20: Project Manager / Trade Ally – Compressed Air Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0490	\$1,521,007	\$3,359,827	\$1,838,820	2.21
Total Resource Cost Test (TRC) No Adder	\$0.0490	\$1,521,007	\$3,054,388	\$1,533,381	2.01
Utility Cost Test (UCT)	\$0.0390	\$1,209,126	\$3,054,388	\$1,845,261	2.53
Participant Cost Test (PCT)		\$1,062,469	\$3,741,694	\$2,679,225	3.52
Rate Impact Test (RIM)		\$4,200,231	\$3,054,388	(\$1,145,844)	0.73
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000944
Discounted Participant Payback (years)					4.01

Table 21: Project Manager / Trade Ally – Energy Management Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0540	\$742,871	\$1,892,389	\$1,149,518	2.55
Total Resource Cost Test (TRC) No Adder	\$0.0540	\$742,871	\$1,720,354	\$977,482	2.32
Utility Cost Test (UCT)	\$0.0527	\$725,473	\$1,720,354	\$994,880	2.37
Participant Cost Test (PCT)		\$139,882	\$1,442,298	\$1,302,415	10.31
Rate Impact Test (RIM)		\$2,045,287	\$1,720,354	(\$324,933)	0.84
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001327
Discounted Participant Payback (years)					0.29



Table 22: Project Manager / Trade Ally – Fast Acting Doors Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0875	\$554,565	\$770,450	\$215,885	1.39
Total Resource Cost Test (TRC) No Adder	\$0.0875	\$554,565	\$700,409	\$145,844	1.26
Utility Cost Test (UCT)	\$0.0686	\$434,465	\$700,409	\$265,944	1.61
Participant Cost Test (PCT)		\$340,285	\$881,331	\$541,046	2.59
Rate Impact Test (RIM)		\$1,095,611	\$700,409	(\$395,202)	0.64
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000363
Discounted Participant Payback (years)					3.09

Table 23: Project Manager / Trade Ally – HVAC Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1052	\$2,932,029	\$2,967,748	\$35,719	1.01
Total Resource Cost Test (TRC) No Adder	\$0.1052	\$2,932,029	\$2,697,953	(\$234,077)	0.92
Utility Cost Test (UCT)	\$0.0706	\$1,966,543	\$2,697,953	\$731,410	1.37
Participant Cost Test (PCT)		\$2,324,240	\$4,406,618	\$2,082,378	1.90
Rate Impact Test (RIM)		\$5,014,407	\$2,697,953	(\$2,316,454)	0.54
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001126
Discounted Participant Payback (years)					6.72

Table 24: Project Manager / Trade Ally – Motors Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0500	\$2,594,580	\$5,613,277	\$3,018,697	2.16
Total Resource Cost Test (TRC) No Adder	\$0.0500	\$2,594,580	\$5,102,979	\$2,508,399	1.97
Utility Cost Test (UCT)	\$0.0403	\$2,090,187	\$5,102,979	\$3,012,792	2.44
Participant Cost Test (PCT)		\$1,955,782	\$6,785,157	\$4,829,375	3.47
Rate Impact Test (RIM)		\$7,423,955	\$5,102,979	(\$2,320,976)	0.69
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001668
Discounted Participant Payback (years)					4.31



Table 25: Project Manager / Trade Ally – Refrigeration Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0364	\$2,487,288	\$6,971,311	\$4,484,023	2.80
Total Resource Cost Test (TRC) No Adder	\$0.0364	\$2,487,288	\$6,337,555	\$3,850,268	2.55
Utility Cost Test (UCT)	\$0.0314	\$2,148,171	\$6,337,555	\$4,189,384	2.95
Participant Cost Test (PCT)		\$1,694,139	\$8,827,464	\$7,133,324	5.21
Rate Impact Test (RIM)		\$9,620,612	\$6,337,555	(\$3,283,057)	0.66
Lifecycle Revenue Impacts (\$/kWh)					\$0.0002247
Discounted Participant Payback (years)					2.69

Table 26: Project Manager / Trade Ally – Wastewater Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0466	\$426,727	\$935,894	\$509,167	2.19
Total Resource Cost Test (TRC) No Adder	\$0.0466	\$426,727	\$850,813	\$424,086	1.99
Utility Cost Test (UCT)	\$0.0377	\$344,871	\$850,813	\$505,942	2.47
Participant Cost Test (PCT)		\$316,708	\$1,248,805	\$932,096	3.94
Rate Impact Test (RIM)		\$1,358,824	\$850,813	(\$508,011)	0.63
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000305
Discounted Participant Payback (years)					3.80

Table 27: Project Manager / Trade Ally – Building Shell Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1685	\$242,922	\$126,391	(\$116,531)	0.52
Total Resource Cost Test (TRC) No Adder	\$0.1685	\$242,922	\$114,901	(\$128,021)	0.47
Utility Cost Test (UCT)	\$0.0794	\$114,474	\$114,901	\$426	1.00
Participant Cost Test (PCT)		\$209,110	\$240,874	\$31,765	1.15
Rate Impact Test (RIM)		\$274,686	\$114,901	(\$159,786)	0.42
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000062
Discounted Participant Payback (years)					13.02



Table 28: Project Manager / Trade Ally – Engine Block Heater Controls Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0552	\$87,879	\$171,976	\$84,097	1.96
Total Resource Cost Test (TRC) No Adder	\$0.0552	\$87,879	\$156,342	\$68,462	1.78
Utility Cost Test (UCT)	\$0.0438	\$69,600	\$156,342	\$86,741	2.25
Participant Cost Test (PCT)		\$37,958	\$188,626	\$150,668	4.97
Rate Impact Test (RIM)		\$238,547	\$156,342	(\$82,205)	0.66
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000068
Discounted Participant Payback (years)					2.01

Table 29: Project Manager / Trade Ally – Food Service Equipment Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0649	\$1,778	\$3,092	\$1,313	1.74
Total Resource Cost Test (TRC) No Adder	\$0.0649	\$1,778	\$2,811	\$1,032	1.58
Utility Cost Test (UCT)	\$0.0401	\$1,098	\$2,811	\$1,713	2.56
Participant Cost Test (PCT)		\$1,055	\$3,319	\$2,264	3.15
Rate Impact Test (RIM)		\$4,042	\$2,811	(\$1,232)	0.70
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000001
Discounted Participant Payback (years)					3.18

Table 30: Project Manager / Trade Ally – Lighting Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0630	\$7,336,380	\$11,227,289	\$3,890,909	1.53
Total Resource Cost Test (TRC) No Adder	\$0.0630	\$7,336,380	\$10,206,626	\$2,870,246	1.39
Utility Cost Test (UCT)	\$0.0681	\$7,935,820	\$10,206,626	\$2,270,806	1.29
Participant Cost Test (PCT)		\$4,629,548	\$17,082,901	\$12,453,353	3.69
Rate Impact Test (RIM)		\$19,789,732	\$10,206,626	(\$9,583,106)	0.52
Lifecycle Revenue Impacts (\$/kWh)					\$0.0005062
Discounted Participant Payback (years)					3.25



Table 31: Project Manager / Trade Ally – Custom Capital Projects Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0662	\$978,557	\$1,627,052	\$648,495	1.66
Total Resource Cost Test (TRC) No Adder	\$0.0662	\$978,557	\$1,479,138	\$500,581	1.51
Utility Cost Test (UCT)	\$0.0514	\$760,371	\$1,479,138	\$718,768	1.95
Participant Cost Test (PCT)		\$581,831	\$1,698,738	\$1,116,907	2.92
Rate Impact Test (RIM)		\$2,095,465	\$1,479,138	(\$616,326)	0.71
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000471
Discounted Participant Payback (years)					5.14

Table 32: Project Manager / Trade Ally – Farm & Dairy, Custom Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0760	\$124,619	\$191,747	\$67,128	1.54
Total Resource Cost Test (TRC) No Adder	\$0.0760	\$124,619	\$174,316	\$49,696	1.40
Utility Cost Test (UCT)	\$0.0655	\$107,428	\$174,316	\$66,888	1.62
Participant Cost Test (PCT)		\$71,220	\$197,004	\$125,784	2.77
Rate Impact Test (RIM)		\$250,403	\$174,316	(\$76,087)	0.70
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000068
Discounted Participant Payback (years)					3.98

Table 33: Project Manager / Trade Ally – Drain for wheel line, hand line, portable main line, pivot, or linear Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1543	\$2,119	\$2,090	(\$29)	0.99
Total Resource Cost Test (TRC) No Adder	\$0.1543	\$2,119	\$1,900	(\$219)	0.90
Utility Cost Test (UCT)	\$0.0712	\$978	\$1,900	\$922	1.94
Participant Cost Test (PCT)		\$1,528	\$1,754	\$226	1.15
Rate Impact Test (RIM)		\$2,345	\$1,900	(\$445)	0.81
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000001
Discounted Participant Payback (years)					5.14



Table 34: Project Manager / Trade Ally – Gasket for wheel line, hand line, or portable main line Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0999	\$11,209	\$17,078	\$5,870	1.52
Total Resource Cost Test (TRC) No Adder	\$0.0999	\$11,209	\$15,526	\$4,317	1.39
Utility Cost Test (UCT)	\$0.0637	\$7,153	\$15,526	\$8,372	2.17
Participant Cost Test (PCT)		\$6,379	\$13,491	\$7,112	2.11
Rate Impact Test (RIM)		\$18,321	\$15,526	(\$2,795)	0.85
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000007
Discounted Participant Payback (years)					2.79

Table 35: Project Manager / Trade Ally – Impact Sprinkler, New or Rebuilt Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$1.3038	\$7,867	\$911	(\$6,957)	0.12
Total Resource Cost Test (TRC) No Adder	\$1.3038	\$7,867	\$828	(\$7,039)	0.11
Utility Cost Test (UCT)	\$0.0701	\$423	\$828	\$405	1.96
Participant Cost Test (PCT)		\$7,638	\$800	(\$6,838)	0.10
Rate Impact Test (RIM)		\$1,030	\$828	(\$202)	0.80
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					59.18

Table 36: Project Manager / Trade Ally – Irrigation Pump Upgrades Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0645	\$801,267	\$1,673,302	\$872,036	2.09
Total Resource Cost Test (TRC) No Adder	\$0.0645	\$801,267	\$1,521,184	\$719,918	1.90
Utility Cost Test (UCT)	\$0.0460	\$571,398	\$1,521,184	\$949,786	2.66
Participant Cost Test (PCT)		\$523,590	\$1,635,576	\$1,111,986	3.12
Rate Impact Test (RIM)		\$1,913,252	\$1,521,184	(\$392,068)	0.80
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000430
Discounted Participant Payback (years)					4.80



Table 37: Project Manager / Trade Ally – Irrigation Pump VFD Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0880	\$626,062	\$1,017,821	\$391,759	1.63
Total Resource Cost Test (TRC) No Adder	\$0.0880	\$626,062	\$925,292	\$299,229	1.48
Utility Cost Test (UCT)	\$0.0625	\$445,050	\$925,292	\$480,242	2.08
Participant Cost Test (PCT)		\$419,187	\$974,255	\$555,068	2.32
Rate Impact Test (RIM)		\$1,181,130	\$925,292	(\$255,839)	0.78
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000339
Discounted Participant Payback (years)					4.30

Table 38: Project Manager / Trade Ally – Nozzle Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0683	\$4,114	\$9,164	\$5,051	2.23
Total Resource Cost Test (TRC) No Adder	\$0.0683	\$4,114	\$8,331	\$4,218	2.03
Utility Cost Test (UCT)	\$0.0527	\$3,172	\$8,331	\$5,159	2.63
Participant Cost Test (PCT)		\$1,522	\$6,574	\$5,051	4.32
Rate Impact Test (RIM)		\$9,165	\$8,331	(\$834)	0.91
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000004
Discounted Participant Payback (years)					1.34

Table 39: Project Manager / Trade Ally – Rotating Sprinkler Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$1.3038	\$7,867	\$911	(\$6,957)	0.12
Total Resource Cost Test (TRC) No Adder	\$1.3038	\$7,867	\$828	(\$7,039)	0.11
Utility Cost Test (UCT)	\$0.0701	\$423	\$828	\$405	1.96
Participant Cost Test (PCT)		\$7,638	\$800	(\$6,838)	0.10
Rate Impact Test (RIM)		\$1,030	\$828	(\$202)	0.80
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					59.18



Table 40: Project Manager / Trade Ally – Sprinkler Package - replace high pressure to MESA Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0000	\$0	\$0	\$0	n/a
Total Resource Cost Test (TRC) No Adder	\$0.0000	\$0	\$0	\$0	n/a
Utility Cost Test (UCT)	\$0.0000	\$0	\$0	\$0	n/a
Participant Cost Test (PCT)		\$0	\$0	\$0	n/a
Rate Impact Test (RIM)		\$0	\$0	\$0	n/a
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					n/a

Table 41: Project Manager / Trade Ally – Sprinkler Package - replace LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0000	\$0	\$0	\$0	n/a
Total Resource Cost Test (TRC) No Adder	\$0.0000	\$0	\$0	\$0	n/a
Utility Cost Test (UCT)	\$0.0000	\$0	\$0	\$0	n/a
Participant Cost Test (PCT)		\$0	\$0	\$0	n/a
Rate Impact Test (RIM)		\$0	\$0	\$0	n/a
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					n/a

Table 42: Project Manager / Trade Ally – Sprinkler Package - replace MESA Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1989	\$56,704	\$43,036	(\$13,667)	0.76
Total Resource Cost Test (TRC) No Adder	\$0.1989	\$56,704	\$39,124	(\$17,580)	0.69
Utility Cost Test (UCT)	\$0.0580	\$16,535	\$39,124	\$22,589	2.37
Participant Cost Test (PCT)		\$45,862	\$34,349	(\$11,513)	0.75
Rate Impact Test (RIM)		\$45,190	\$39,124	(\$6,066)	0.87
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000016
Discounted Participant Payback (years)					8.28



Table 43: Project Manager / Trade Ally – Upgrade sprinkler package - high pressure to MESA Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1062	\$20,078	\$27,042	\$6,965	1.35
Total Resource Cost Test (TRC) No Adder	\$0.1062	\$20,078	\$24,584	\$4,506	1.22
Utility Cost Test (UCT)	\$0.0442	\$8,348	\$24,584	\$16,236	2.94
Participant Cost Test (PCT)		\$14,576	\$22,396	\$7,820	1.54
Rate Impact Test (RIM)		\$27,898	\$24,584	(\$3,314)	0.88
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000008
Discounted Participant Payback (years)					6.51

Table 44: Project Manager / Trade Ally – Upgrade sprinkler package - high pressure to LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0000	\$0	\$0	\$0	n/a
Total Resource Cost Test (TRC) No Adder	\$0.0000	\$0	\$0	\$0	n/a
Utility Cost Test (UCT)	\$0.0000	\$0	\$0	\$0	n/a
Participant Cost Test (PCT)		\$0	\$0	\$0	n/a
Rate Impact Test (RIM)		\$0	\$0	\$0	n/a
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					n/a

Table 45: Project Manager / Trade Ally – Upgrade sprinkler package - MESA to LESA/LEPA/MDI Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1654	\$82,728	\$71,571	(\$11,158)	0.87
Total Resource Cost Test (TRC) No Adder	\$0.1654	\$82,728	\$65,064	(\$17,664)	0.79
Utility Cost Test (UCT)	\$0.0461	\$23,081	\$65,064	\$41,983	2.82
Participant Cost Test (PCT)		\$68,168	\$60,261	(\$7,907)	0.88
Rate Impact Test (RIM)		\$74,821	\$65,064	(\$9,757)	0.87
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000021
Discounted Participant Payback (years)					11.31



Table 46: Project Manager / Trade Ally – Wheel Line Leveler Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.3423	\$1,398	\$608	(\$790)	0.43
Total Resource Cost Test (TRC) No Adder	\$0.3423	\$1,398	\$553	(\$845)	0.40
Utility Cost Test (UCT)	\$0.0646	\$264	\$553	\$289	2.09
Participant Cost Test (PCT)		\$1,258	\$538	(\$720)	0.43
Rate Impact Test (RIM)		\$678	\$553	(\$126)	0.81
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					16.82

Table 47 presents the PY2024 and PY2025 cost-effectiveness results with NEIs for the Midstream Lighting delivery options.

Table 47: Midstream – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0549	\$138,092	\$303,946	\$165,854	2.20
Total Resource Cost Test (TRC) No Adder	\$0.0549	\$138,092	\$281,803	\$143,711	2.04
Utility Cost Test (UCT)	\$0.0486	\$122,392	\$221,433	\$99,041	1.81
Participant Cost Test (PCT)		\$73,997	\$387,805	\$313,807	5.24
Rate Impact Test (RIM)		\$391,529	\$221,433	(\$170,096)	0.57
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000100
Discounted Participant Payback (years)					1.87

Table 48 through Table 52 presents the PY2024 and PY2025 cost-effectiveness results with NEIs, for the Small Business delivery options.



Table 48: Small Business – Anti-Sweat Heater Control, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0707	\$6,919	\$11,455	\$4,536	1.66
Total Resource Cost Test (TRC) No Adder	\$0.0707	\$6,919	\$10,442	\$3,524	1.51
Utility Cost Test (UCT)	\$0.0521	\$5,104	\$10,124	\$5,020	1.98
Participant Cost Test (PCT)		\$4,377	\$13,451	\$9,074	3.07
Rate Impact Test (RIM)		\$15,674	\$10,124	(\$5,550)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000004
Discounted Participant Payback (years)					3.90

Table 49: Small Business – DI HPWH, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0868	\$12,139	\$12,720	\$581	1.05
Total Resource Cost Test (TRC) No Adder	\$0.0868	\$12,139	\$11,599	(\$540)	0.96
Utility Cost Test (UCT)	\$0.1154	\$16,133	\$11,210	(\$4,923)	0.69
Participant Cost Test (PCT)		\$9,282	\$29,514	\$20,232	3.18
Rate Impact Test (RIM)		\$31,982	\$11,210	(\$20,772)	0.35
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000007
Discounted Participant Payback (years)					5.66

Table 50: Small Business – ECM, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0470	\$38,837	\$105,550	\$66,714	2.72
Total Resource Cost Test (TRC) No Adder	\$0.0470	\$38,837	\$98,105	\$59,269	2.53
Utility Cost Test (UCT)	\$0.0420	\$34,673	\$74,448	\$39,775	2.15
Participant Cost Test (PCT)		\$20,384	\$132,457	\$112,073	6.50
Rate Impact Test (RIM)		\$127,252	\$74,448	(\$52,804)	0.59
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000029
Discounted Participant Payback (years)					2.31



Table 51: Small Business – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0593	\$5,217,649	\$8,595,104	\$3,377,455	1.65
Total Resource Cost Test (TRC) No Adder	\$0.0593	\$5,217,649	\$7,823,366	\$2,605,717	1.50
Utility Cost Test (UCT)	\$0.0742	\$6,526,474	\$7,717,388	\$1,190,913	1.18
Participant Cost Test (PCT)		\$3,308,104	\$14,234,240	\$10,926,137	4.30
Rate Impact Test (RIM)		\$16,037,808	\$7,717,388	(\$8,320,420)	0.48
Lifecycle Revenue Impacts (\$/kWh)					\$0.0004103
Discounted Participant Payback (years)					2.79

Table 52: Small Business – Small DHP, SMB with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1151	\$170,087	\$159,793	(\$10,294)	0.94
Total Resource Cost Test (TRC) No Adder	\$0.1151	\$170,087	\$146,455	(\$23,632)	0.86
Utility Cost Test (UCT)	\$0.0868	\$128,169	\$133,380	\$5,211	1.04
Participant Cost Test (PCT)		\$138,782	\$275,507	\$136,725	1.99
Rate Impact Test (RIM)		\$293,737	\$133,380	(\$160,357)	0.45
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000066
Discounted Participant Payback (years)					7.56

Table 53 through Table 71 presents the PY2024 and PY2025 cost-effectiveness results with NEIs, for the Project Manager / Trade Ally delivery options. Table 72 details the non-energy benefits included in this analysis.

Table 53: Project Manager / Trade Ally – Adaptive Refrigeration Control with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0725	\$176,811	\$277,274	\$100,463	1.57
Total Resource Cost Test (TRC) No Adder	\$0.0725	\$176,811	\$252,671	\$75,859	1.43
Utility Cost Test (UCT)	\$0.0536	\$130,600	\$246,037	\$115,438	1.88
Participant Cost Test (PCT)		\$115,528	\$340,083	\$224,554	2.94
Rate Impact Test (RIM)		\$394,732	\$246,037	(\$148,695)	0.62
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000101
Discounted Participant Payback (years)					4.08



Table 54: Project Manager / Trade Ally – Additional Measures with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0547	\$2,156,783	\$4,933,042	\$2,776,259	2.29
Total Resource Cost Test (TRC) No Adder	\$0.0547	\$2,156,783	\$4,549,015	\$2,392,232	2.11
Utility Cost Test (UCT)	\$0.0405	\$1,595,498	\$3,840,269	\$2,244,771	2.41
Participant Cost Test (PCT)		\$1,680,481	\$6,126,499	\$4,446,018	3.65
Rate Impact Test (RIM)		\$5,894,055	\$3,840,269	(\$2,053,786)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001324
Discounted Participant Payback (years)					4.11

Table 55: Project Manager / Trade Ally – Compressed Air with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0490	\$1,521,007	\$3,468,740	\$1,947,734	2.28
Total Resource Cost Test (TRC) No Adder	\$0.0490	\$1,521,007	\$3,163,301	\$1,642,295	2.08
Utility Cost Test (UCT)	\$0.0390	\$1,209,126	\$3,054,388	\$1,845,261	2.53
Participant Cost Test (PCT)		\$1,062,469	\$3,850,608	\$2,788,139	3.62
Rate Impact Test (RIM)		\$4,200,231	\$3,054,388	(\$1,145,844)	0.73
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000944
Discounted Participant Payback (years)					3.89

Table 56: Project Manager / Trade Ally – Energy Management with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0540	\$742,871	\$2,455,738	\$1,712,867	3.31
Total Resource Cost Test (TRC) No Adder	\$0.0540	\$742,871	\$2,283,703	\$1,540,831	3.07
Utility Cost Test (UCT)	\$0.0527	\$725,473	\$1,720,354	\$994,880	2.37
Participant Cost Test (PCT)		\$139,882	\$2,005,647	\$1,865,765	14.34
Rate Impact Test (RIM)		\$2,045,287	\$1,720,354	(\$324,933)	0.84
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001327
Discounted Participant Payback (years)					0.21



Table 57: Project Manager / Trade Ally – Fast Acting Doors with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0875	\$554,565	\$787,699	\$233,133	1.42
Total Resource Cost Test (TRC) No Adder	\$0.0875	\$554,565	\$717,658	\$163,092	1.29
Utility Cost Test (UCT)	\$0.0686	\$434,465	\$700,409	\$265,944	1.61
Participant Cost Test (PCT)		\$340,285	\$898,580	\$558,295	2.64
Rate Impact Test (RIM)		\$1,095,611	\$700,409	(\$395,202)	0.64
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000363
Discounted Participant Payback (years)					3.03

Table 58: Project Manager / Trade Ally – HVAC with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1052	\$2,932,029	\$3,109,476	\$177,447	1.06
Total Resource Cost Test (TRC) No Adder	\$0.1052	\$2,932,029	\$2,839,681	(\$92,349)	0.97
Utility Cost Test (UCT)	\$0.0706	\$1,966,543	\$2,697,953	\$731,410	1.37
Participant Cost Test (PCT)		\$2,324,240	\$4,548,346	\$2,224,106	1.96
Rate Impact Test (RIM)		\$5,014,407	\$2,697,953	(\$2,316,454)	0.54
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001126
Discounted Participant Payback (years)					6.50

Table 59: Project Manager / Trade Ally – Motors with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0500	\$2,594,580	\$6,417,632	\$3,823,051	2.47
Total Resource Cost Test (TRC) No Adder	\$0.0500	\$2,594,580	\$5,907,334	\$3,312,753	2.28
Utility Cost Test (UCT)	\$0.0403	\$2,090,187	\$5,102,979	\$3,012,792	2.44
Participant Cost Test (PCT)		\$1,955,782	\$7,589,512	\$5,633,729	3.88
Rate Impact Test (RIM)		\$7,423,955	\$5,102,979	(\$2,320,976)	0.69
Lifecycle Revenue Impacts (\$/kWh)					\$0.0001668
Discounted Participant Payback (years)					3.85



Table 60: Project Manager / Trade Ally – Refrigeration with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0364	\$2,487,288	\$8,617,584	\$6,130,296	3.46
Total Resource Cost Test (TRC) No Adder	\$0.0364	\$2,487,288	\$7,983,829	\$5,496,541	3.21
Utility Cost Test (UCT)	\$0.0314	\$2,148,171	\$6,337,555	\$4,189,384	2.95
Participant Cost Test (PCT)		\$1,694,139	\$10,473,737	\$8,779,598	6.18
Rate Impact Test (RIM)		\$9,620,612	\$6,337,555	(\$3,283,057)	0.66
Lifecycle Revenue Impacts (\$/kWh)					\$0.0002247
Discounted Participant Payback (years)					2.26

Table 61: Project Manager / Trade Ally – Wastewater with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0466	\$426,727	\$1,099,574	\$672,847	2.58
Total Resource Cost Test (TRC) No Adder	\$0.0466	\$426,727	\$1,014,493	\$587,766	2.38
Utility Cost Test (UCT)	\$0.0377	\$344,871	\$850,813	\$505,942	2.47
Participant Cost Test (PCT)		\$316,708	\$1,412,485	\$1,095,777	4.46
Rate Impact Test (RIM)		\$1,358,824	\$850,813	(\$508,011)	0.63
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000305
Discounted Participant Payback (years)					3.36

Table 62: Project Manager / Trade Ally – Lighting with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0630	\$7,336,380	\$14,096,462	\$6,760,082	1.92
Total Resource Cost Test (TRC) No Adder	\$0.0630	\$7,336,380	\$13,075,799	\$5,739,420	1.78
Utility Cost Test (UCT)	\$0.0681	\$7,935,820	\$10,206,626	\$2,270,806	1.29
Participant Cost Test (PCT)		\$4,629,548	\$19,952,074	\$15,322,526	4.31
Rate Impact Test (RIM)		\$19,789,732	\$10,206,626	(\$9,583,106)	0.52
Lifecycle Revenue Impacts (\$/kWh)					\$0.0005062
Discounted Participant Payback (years)					2.78



Table 63: Project Manager / Trade Ally – Custom Capital Projects with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0662	\$978,557	\$1,880,593	\$902,036	1.92
Total Resource Cost Test (TRC) No Adder	\$0.0662	\$978,557	\$1,732,680	\$754,122	1.77
Utility Cost Test (UCT)	\$0.0514	\$760,371	\$1,479,138	\$718,768	1.95
Participant Cost Test (PCT)		\$581,831	\$1,952,280	\$1,370,449	3.36
Rate Impact Test (RIM)		\$2,095,465	\$1,479,138	(\$616,326)	0.71
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000471
Discounted Participant Payback (years)					4.47

Table 64: Project Manager / Trade Ally – Drain for wheel line, hand line, portable main line, pivot, or linear with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1543	\$2,119	\$3,351	\$1,232	1.58
Total Resource Cost Test (TRC) No Adder	\$0.1543	\$2,119	\$3,161	\$1,042	1.49
Utility Cost Test (UCT)	\$0.0712	\$978	\$1,900	\$922	1.94
Participant Cost Test (PCT)		\$1,528	\$3,015	\$1,487	1.97
Rate Impact Test (RIM)		\$2,345	\$1,900	(\$445)	0.81
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000001
Discounted Participant Payback (years)					2.99

Table 65: Project Manager / Trade Ally – Gasket for wheel line, hand line, or portable main line with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0999	\$11,209	\$22,498	\$11,289	2.01
Total Resource Cost Test (TRC) No Adder	\$0.0999	\$11,209	\$20,945	\$9,737	1.87
Utility Cost Test (UCT)	\$0.0637	\$7,153	\$15,526	\$8,372	2.17
Participant Cost Test (PCT)		\$6,379	\$18,911	\$12,532	2.96
Rate Impact Test (RIM)		\$18,321	\$15,526	(\$2,795)	0.85
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000007
Discounted Participant Payback (years)					1.99



Table 66: Project Manager / Trade Ally – Impact Sprinkler, New or Rebuilt with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$1.3038	\$7,867	\$7,943	\$76	1.01
Total Resource Cost Test (TRC) No Adder	\$1.3038	\$7,867	\$7,860	(\$7)	1.00
Utility Cost Test (UCT)	\$0.0701	\$423	\$828	\$405	1.96
Participant Cost Test (PCT)		\$7,638	\$7,832	\$194	1.03
Rate Impact Test (RIM)		\$1,030	\$828	(\$202)	0.80
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					6.05

Table 67: Project Manager / Trade Ally – Irrigation Pump with VFD with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0880	\$626,062	\$1,041,883	\$415,821	1.66
Total Resource Cost Test (TRC) No Adder	\$0.0880	\$626,062	\$949,354	\$323,292	1.52
Utility Cost Test (UCT)	\$0.0625	\$445,050	\$925,292	\$480,242	2.08
Participant Cost Test (PCT)		\$419,187	\$998,318	\$579,130	2.38
Rate Impact Test (RIM)		\$1,181,130	\$925,292	(\$255,839)	0.78
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000339
Discounted Participant Payback (years)					4.20

Table 68: Project Manager / Trade Ally – Nozzle with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0683	\$4,114	\$10,475	\$6,361	2.55
Total Resource Cost Test (TRC) No Adder	\$0.0683	\$4,114	\$9,642	\$5,528	2.34
Utility Cost Test (UCT)	\$0.0527	\$3,172	\$8,331	\$5,159	2.63
Participant Cost Test (PCT)		\$1,522	\$7,884	\$6,362	5.18
Rate Impact Test (RIM)		\$9,165	\$8,331	(\$834)	0.91
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000004
Discounted Participant Payback (years)					1.12



Table 69: Project Manager / Trade Ally – Rotating Sprinkler with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$1.3038	\$7,867	\$7,943	\$76	1.01
Total Resource Cost Test (TRC) No Adder	\$1.3038	\$7,867	\$7,860	(\$7)	1.00
Utility Cost Test (UCT)	\$0.0701	\$423	\$828	\$405	1.96
Participant Cost Test (PCT)		\$7,638	\$7,832	\$194	1.03
Rate Impact Test (RIM)		\$1,030	\$828	(\$202)	0.80
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					6.05

Table 70: Project Manager / Trade Ally – Sprinkler Package - replace MESA with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.1989	\$56,704	\$84,814	\$28,111	1.50
Total Resource Cost Test (TRC) No Adder	\$0.1989	\$56,704	\$80,902	\$24,198	1.43
Utility Cost Test (UCT)	\$0.0580	\$16,535	\$39,124	\$22,589	2.37
Participant Cost Test (PCT)		\$45,862	\$76,127	\$30,265	1.66
Rate Impact Test (RIM)		\$45,190	\$39,124	(\$6,066)	0.87
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000016
Discounted Participant Payback (years)					3.74

Table 71: Project Manager / Trade Ally – Wheel Line Leveler with NEIs Cost-Effectiveness Results - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.3423	\$1,398	\$1,788	\$390	1.28
Total Resource Cost Test (TRC) No Adder	\$0.3423	\$1,398	\$1,733	\$335	1.24
Utility Cost Test (UCT)	\$0.0646	\$264	\$553	\$289	2.09
Participant Cost Test (PCT)		\$1,258	\$1,718	\$460	1.37
Rate Impact Test (RIM)		\$678	\$553	(\$126)	0.81
Lifecycle Revenue Impacts (\$/kWh)					\$0.0000000
Discounted Participant Payback (years)					5.27

Table 72: Wattsmart Business Savings Non-Energy Impacts - PY2024 and PY2025

Sector	Delivery Channel	Measure	Annual Non-Energy Impacts per Measure	Measure Life	Total Present Value NEIs
Commercial	Midstream	Lighting	\$4,003	10	\$60,370
Commercial	Project Manager / Trade Ally	Adaptive Refrigeration Control	\$401	12	\$6,633
Commercial	Project Manager / Trade Ally	Additional Measures	\$33,768	15	\$645,792
Commercial	Project Manager / Trade Ally	Building Shell	\$0	15	\$0
Commercial	Project Manager / Trade Ally	Compressed Air	\$2,307	15	\$42,907
Commercial	Project Manager / Trade Ally	Energy Management	\$85,741	3	\$467,110
Commercial	Project Manager / Trade Ally	Engine Block Heater Controls	\$0	10	\$0
Commercial	Project Manager / Trade Ally	Fast Acting Doors	\$1,390	8	\$17,249
Commercial	Project Manager / Trade Ally	Food Service Equipment	\$0	10	\$0
Commercial	Project Manager / Trade Ally	HVAC	\$4,287	14	\$141,728
Commercial	Project Manager / Trade Ally	Lighting	\$117,614	12	\$1,959,812
Commercial	Project Manager / Trade Ally	Motors	\$25,796	15	\$492,942
Commercial	Project Manager / Trade Ally	Refrigeration	\$86,234	14	\$1,581,112
Commercial	Project Manager / Trade Ally	Wastewater	\$8,566	15	\$163,680
Commercial	Small Business - Lighting	Lighting	\$6,363	12	\$105,978
Commercial	Small Business - Non Lighting	Anti-Sweat Heater Control, SMB	\$19	12	\$319
Commercial	Small Business - Non Lighting	DI HPWH, SMB	\$18	18	\$390
Commercial	Small Business - Non Lighting	ECM, SMB	\$1,277	15	\$23,658
Commercial	Small Business - Non Lighting	Engine Block Heater Controls, SMB	\$0	10	\$0
Commercial	Small Business - Non Lighting	Small DHP, SMB	\$705	15	\$13,074
Commercial	Small Business - Non Lighting	Smart T-Stat, SMB	\$0	5	\$0
Industrial	Project Manager / Trade Ally	Additional Measures	\$3,294	15	\$62,954
Industrial	Project Manager / Trade Ally	Compressed Air	\$3,566	14	\$66,006
Industrial	Project Manager / Trade Ally	Custom Capital Projects	\$13,256	15	\$253,541
Industrial	Project Manager / Trade Ally	Energy Management	\$17,675	3	\$96,239
Industrial	Project Manager / Trade Ally	Farm & Dairy	\$0	11	\$0
Industrial	Project Manager / Trade Ally	Lighting	\$54,843	12	\$909,361
Irrigation	Project Manager / Trade Ally	Drain for wheel line, hand line, portable main line, pivot, or linear	\$127	6	\$1,261



Irrigation	Project Manager / Trade Ally	Gasket for wheel line, hand line, or portable main line	\$546	6	\$5,420
Irrigation	Project Manager / Trade Ally	Irrigation Pump VFD	\$1,640	10	\$24,062
Irrigation	Project Manager / Trade Ally	Nozzle	\$132	6	\$1,310
Irrigation	Project Manager / Trade Ally	Rotating sprinkler	\$626	6	\$7,032
Irrigation	Project Manager / Trade Ally	Sprinkler Package - replace MESA	\$3,719	6	\$41,778
Irrigation	Project Manager / Trade Ally	Wheel line leveler	\$95	7	\$1,180



MEMORANDUM

To: Nancy Goddard, Pacific Power
From: Eli Morris, Andy Hudson, Elizabeth Applegate, Julian Graybill Brubaker, AEG
Date: October 30, 2024
Re: Washington NEEA Cost-Effectiveness Analysis – 2024-2025 Biennium Update

AEG estimated the cost-effectiveness of Pacific Power’s allocation of the Northwest Energy Efficiency Alliance’s (NEEA’s) Washington business plan in the state of Washington based on Program Year (PY) 2024 and PY2025 costs and savings estimates provided by Pacific Power. The NEEA program partnership passes the following cost effectiveness tests: Total Resource Cost Test (TRC), the PacifiCorp Total Resource Cost Test (PTRC), the Utility Cost Test (UCT), and the Participant Cost Test (PCT).

The memo provides analysis inputs and results in the following tables:

- Table 1: Cost-Effectiveness Analysis Inputs
- Table 2: Annual Program Costs, Nominal - PY2024 and PY2025
- Table 3: Annual Savings, Nominal - PY2024 and PY2025
- Table 4: NEEA Benefit/Cost Ratios - PY2024 and PY2025

The NEEA business plan will be implemented in PY2024-2025. The following assumptions were utilized in the analysis:

- **Avoided Costs:** derived from PacifiCorp’s 2023 Integrated Resource Plan (IRP) Preferred Portfolio “W10 SC CETA”, converted into annual values using load shapes from the same IRP.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-230904.
- **Retail Rates:** 2021 rates provided by PacifiCorp and escalated by inflation for future years.

Tables 1 through 3 below summarize cost-effectiveness assumptions and results for PacifiCorp’s allocation of NEEA’s Washington business plan.



Table 1: Cost-Effectiveness Analysis Inputs

Parameter	Value
Discount Rate	6.77%
Residential Line Loss	7.68%
Commercial Line Loss	7.60%
Industrial Line Loss	6.82%
Residential Energy Rate (\$/kWh)	\$0.094
Commercial Energy Rate (\$/kWh)	\$0.092
Industrial Energy Rate (\$/kWh)	\$0.075
Inflation Rate ¹	2.27%
Net-to-Gross	100%
Realization Rate	100%

Table 2: Annual Program Costs, Nominal - PY2024 and PY2025

Parameter	Value
Program Delivery	\$1,947,114
Utility Admin	\$20,791
Incentives	\$0
Total Utility Budget	\$1,967,906
Gross Customer Costs	\$0

Table 3: Annual Savings, Nominal - PY2024 and PY2025

Parameter	Value
Gross kWh Savings at Site	8,893,892
Realization Rate	100%
Adjusted Gross kWh Savings at Site	8,893,892
Net to Gross Ratio	100%
Net kWh Savings at Site	8,893,892
Measure Life	16

Table 4 presents the Washington NEEA business plan cost-effectiveness; the program is cost-effective for the UCT, PCT, PacifiCorp TRC, and TRC tests. Note that since no gross customer costs are included, the PCT is cost-effective by default with an immediate participant payback.

¹ Future rates determined using a 2.27% annual escalator.



Table 4: NEEA Benefit/Cost Ratios - PY2024 and PY2025

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0219	\$1,904,387	\$8,529,078	\$6,624,690	4.48
Total Resource Cost Test (TRC) No Adder	\$0.0219	\$1,904,387	\$7,753,707	\$5,849,320	4.07
Utility Cost Test (UCT)	\$0.0219	\$1,904,387	\$7,753,707	\$5,849,320	4.07
Participant Cost Test (PCT)		\$0	\$10,044,016	\$10,044,016	Pass ²
Rate Impact Test (RIM)		\$11,948,404	\$7,753,707	(\$4,194,697)	0.65
Lifecycle Revenue Impacts (\$/kWh)					\$0.0002314
Discounted Participant Payback (years)					0.00

² The Participant Cost Test passes, but since there is no cost to participants, which results in a divide by zero error, it is listed as 'Pass' and the participant payback is immediate.