PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
Portland, Oregon 97232

June 1, 2016

VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY

Steven V. King
Executive Director and Secretary
Washington Utilities and Transportation Commission
1300 S. Evergreen Park Drive SW
P.O. Box 47250
Olympia, WA 98504-7250

RE: Docket UE-132047—2015 Annual Report on Conservation Acquisition

In accordance with WAC 480-109-120(3), Pacific Power & Light Company, a division of PacifiCorp, submits for filing an original and two copies of its 2015 Annual Report on Conservation Acquisition for the year ended December 31, 2015.

Pacific Power respectfully requests that all data requests regarding this matter be addressed to:

By email (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah Street, Suite 2000
Portland, OR 97232

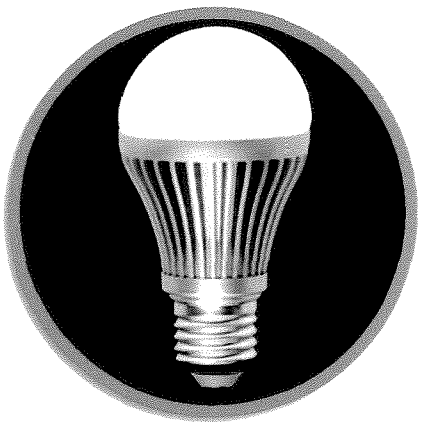
Please direct informal inquiries to Ariel Son, Regulatory Projects Manager, at (503) 813-5410.

Sincerely,

R. Bryce Dalley/lsm

R. Bryce Dalley
Vice President, Regulation

Enclosures



Washington Annual Report on Conservation Acquisition

January 1, 2015 – December 31, 2015

Issued June 1, 2016

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List of Abbreviations and Acronyms

CFL	Compact Fluorescent Lighting
DSM	Demand-side Management
Schedule 191	Schedule 191 System Benefits Charge Adjustment
EM&V	Evaluation, Measurement & Verification
GWh	Gigawatt-hour(s)
HVAC	Heating, Ventilation and Air Conditioning
IRP	Integrated Resource Plan
kWh	Kilowatt-hour
LED	Light-emitting Diode
MWh	Megawatt-hour
NEEA	Northwest Energy Efficiency Alliance
NEF	National Energy Foundation
NTG	Net-to-Gross
PCT	Participant Cost Test
PTRC	PacifiCorp Total Resource Cost test
RIM	Ratepayer Impact Measure test
SBC	System Benefit Charge
TRC	Total Resource Cost test
TRL	Technical Resource Library
UCT	Utility Cost Test
UES	Unit Energy Savings
VFD	Variable-Frequency Drive

Executive Summary

PacifiCorp is a multi-jurisdictional electric utility providing retail service to customers in Washington, California, Idaho, Oregon, Utah, and Wyoming. Pacific Power & Light Company (Pacific Power or Company), a division of PacifiCorp, serves approximately 134,000 customers in Washington. The Company works with its customers to reduce the need for investment in supply side resources and infrastructure by reducing energy and peak consumption through cost-effective energy efficiency programs.

In 2015, the Company offered five energy efficiency programs in Washington approved by the Washington Utilities and Transportation Commission (Commission), and received energy savings and market transformation benefits through its affiliation with the Northwest Energy Efficiency Alliance (NEEA). The expenditures associated with these programs are recovered through the System Benefits Charge Adjustment, Schedule 191 (Schedule 191).

This report provides details on program results and activities, expenditures, and Schedule 191 revenue for the performance period from January 1, 2015, through December 31, 2015. The Company, on behalf of its customers, invested $11.3m in energy efficiency information, services, and incentives during the reporting period. The investment yielded approximately 47.4 gigawatt-hours (GWh) in first year savings[1] and approximately 6.71 megawatts of energy efficiency savings related capacity reductions.[2] Net benefits over the life of the individual measures are estimated at $12 m[3].

Overall, 2015 portfolio savings remained consistent with 2014 performance when excluding NEEA savings. With NEEA savings, the portfolio savings decreased 7 percent, from 50.6 GWh in 2014 to 47.4 GWh in 2015.

The portfolio was cost effective based on four of the five standard cost effectiveness tests for the reporting period. The ratepayer impact measure test was less than 1.0, indicating near-term upward pressure was placed on the price per kilowatt-hour (kWh) given a reduction in sales. The cost effectiveness of the Company's Washington energy efficiency program portfolio from various perspectives is provided in Table 1 below.

[1] Gross reported savings at site.

[2] See Planning section for explanation on how the capacity contribution savings values are calculated.

[3] See Appendix 1 – Total Resource Cost Test plus 10 percent Net Benefits including NEEA and Non-Energy Benefits.

Table 1
Cost Effectiveness for the Portfolio[4] (includes non-energy benefits)

	B/C Ratio with NEEA	B/C Ratio without NEEA
PacifiCorp Total Resource Cost Test (PTRC) plus 10%[5]	1.70	1.74
Total Resource Cost (TRC) Test[6]	1.57	1.60
Utility Cost Test (UCT)[7]	2.17	2.28
Participant Cost Test (PCT)[8]	3.31	3.19
Ratepayer Impact Cost Test (RIM)[9]	0.57	0.58

All cost effectiveness calculations assume a net-to-gross (NTG) of 1.0, consistent with the Northwest Power and Conservation Council's methodology. Portfolio-level cost effectiveness includes portfolio costs such as the Process and Impact Evaluations, Class 2 DSM (demand side management) Potentials Assessment and the DSM system database. Consistent with the Northwest Power and Conservation Council's methodology, the Company includes quantifiable non-energy benefits at the portfolio and residential level, as well as the Home Energy Savings and Low Income Weatherization program levels. Low Income Weatherization is not included in the portfolio or sector-level cost effectiveness analysis per WAC 480-109-100(10)(b). Appendix 1 provides 2015 cost effectiveness performance.

The Company, working with its third-party program delivery administrators, collaborated with the following number of retailers, contractors and vendors in the delivery of its energy efficiency programs in the state of Washington.[10] Table 2 below lists the energy efficiency infrastructure.

[4] Ratios include Non-Energy Benefits, but excludes costs as outlined in the Company's EM&V Framework (e.g. Class 1 & 3 of the potential study).

[5] The PTRC includes the 10 percent conservation benefit and risk adder in addition to quantifiable non-energy benefits. PTRC is consistent with the Northwest Power Council's cost effectiveness methodology and complies with the cost effectiveness definition (RCW 80.52.030(7)).

[6] The TRC compares the total cost of a supply side resource to the total cost of energy efficiency resources, including costs paid by the customer in excess of the program incentives. The test is used to determine if an energy efficiency program is cost effective from a total cost perspective.

[7] The UCT compares the total cost incurred by the utility to the benefits associated with displacing or deferring supply side resources.

[8] The PCT compares the portion of the resource paid directly by participants to the savings realized by the participants.

[9] The RIM examines the impact of energy efficiency expenditures on non-participating ratepayers overall. Unlike supply-side investments, energy efficiency programs reduce energy sales. Reduced energy sales can lower revenue requirements while putting upward pressure on rates as the remaining fixed costs are spread over fewer kilowatt-hours.

[10] See program specific section for information on third party administrators.

Table 2
Energy Efficiency Infrastructure

Sector	Type	No.
Residential	Lighting Retailers	17
	Appliances Retailers	21
	HVAC Contractors	60
	Plumbing Retailers	47
	Weatherization Contractors	29
	Low Income Agencies	3
Commercial and Industrial	Lighting Trade Allies	67
	HVAC Trade Allies	31
	Motors and VFD Trade Allies	49
	Small Business Approved Contractor	7
	LEDE Instant Incentive Approved Distributor	7
	Engineering Firms	21

Regulatory Activities

During the 2015 reporting period, the Company filed a number of compliance and/or informational reports, updates and requests with the Commission in support of Company DSM programs. The following is a list of those filings:

- March 31, 2015 –Washington Annual Report on Conservation Acquisition for 2014, related to docket UE-132047. The report provided details on conservation program results, activities, expenditures, and systems benefits charge revenue amounts for calendar year 2014.
- June 1, 2015 – Washington Annual Report on Conservation Acquisition for 2014 (corrected version). A revised annual report was filed to include a copy of the conservation report filed with the Washington Department of Commerce and correct the allocation of project savings for the *watt*smart business sector.
- June 1, 2015 – Schedule 191-System Benefits Charge adjustment, Advice 15-01, docket UE-151157. An advice filing was submitted to adjust Schedule 191—Systems Benefits Charge Adjustment, which proposed an increase of $0.5 million for an average increase to Washington customers of approximately 0.2 percent. The Company's request was allowed to go into effect on August 1, 2015, as part of the no action agenda at the July 30, 2015 open meeting.
- June 1, 2015 – PacifiCorp Conservation and Renewable Energy Target to Washington Department of Commerce for 2014 performance. The report detailed the Company's progress in meeting the targets established in RCW 19.285.040 (EIA requirements).
- July 10, 2015 – Supplemental filing-Schedule 191-System Benefits Charge adjustment, Advice 15-01, docket UE-151157. The supplemental filing incorporated additional procedural information.
- August 14, 2015 – Revised PacifiCorp Conservation and Renewable Energy Target to Washington Department of Commerce.
- October 1, 2015 – Petition to Modify Order and Associated Conditions to Comply with WAC 480-109 (housekeeping activity), related to docket UE-132047. This filing was administrative and was driven by the need for Commission consideration in advance of the Company's submittal of the its new Ten-Year Conservation Potential and 2016-2017 Biennial Conservation Target (Ten-Year Conservation Plan) on October 30, 2015.
- October 30, 2015 – 2015 Biennial Conservation Plan which included the Company's Ten-Year Conservation Potential, 2016-2017 Biennial Conservation Target (Plan), and DSM Business Plan were filed under docket UE-132047, Order 01. The DSM Business Plan was provided as Appendix 7 to the Plan. The Biennial Conservation Plan and 10-year conservation target was approved at the open meeting on December 17, 2015.
- November 13, 2015 – Schedule 114-Residential Energy Efficiency Rider-Optional for Qualifying Low Income Customers, Advice 15-03, docket UE-152173. The filing revised the Low Income Weatherization program (Schedule 114) in an effort to: a) better align eligibility and/or requirements with other sources of funding, b) match eligible efficiency measures with updated technologies, c) respond to requests from our partnering agencies,

and d) update measure life information used to calculated savings to investment ratios. The proposed changes were allowed to go into effect on January 1, 2016, as part of the no action agenda at the December 30, 2015 open meeting.

- November 19, 2015 – Cancel Schedule 107-Refrigerator Recycling Program Service, Advice 15-04, docket UE-152237. As part of the planning process for the 2016-2017 biennial period, the Company filed Advice No. 15-04 to cancel Schedule 107 effective January 1, 2016, based on forecasted sub-optimal cost effectiveness utilizing new (and lower) unit energy savings from the Company's program evaluation. The Commission approved it at the December 30, 2015 open meeting.

Advisory Group Activities

At a minimum of four times per year, the Company seeks regular input regarding its energy efficiency programs from its Washington DSM Advisory Group. This group includes representatives from a variety of constituent organizations. The Company collaborated with its DSM Advisory Group throughout 2015 on the following matters:

March 18, 2015

- Commercial building benchmarking software;
- 2014 annual report summary;
- Cost recovery tariff;
- 2015 conservation potential study;
- 2015 IRP preferred portfolio and implementation plan;
- Program evaluation update;
- Tracked savings, frozen/flexible baselines, UES values;
- Home energy reports.

June 9, 2015

- Target setting and new rules;
- Review of preferred portfolio and adjustment process;
- NEEA;
- Scope/design for 2016 conservation potential assessment;
- Home energy reports expansion update;
- System benefits charge filing explanation;
- 2014 annual report;
- Program evaluations;
- Frozen/flexible UES – preliminary analysis.

August 20, 2015

- Forecast, proposed adjustments and target;
- Updated information on adjustments;
    - Residential lighting – August 18, 2015 regional technical forum meeting
    - Appliance recycling – draft evaluation results
- NEEA treatment;

- 2015 decrement values.

September 14, 2015

- 2015 home energy reports/Opower economics;
- 2016-2017 home energy reports /Opower forecast;
- Next/final round of adjustments to 10-year forecast;
- Proposed 2-year target;
- Proposed pilot measure (heat pump dryers);
- Low Income Program Evaluation for program years 2011-2012.

December 21, 2015

- Communications and outreach plan for 2016-2017;
    - Advertising;
    - *watt*smart Business;
    - Education.

DSM Expenditures

System Benefits Charge Balancing Account Summary

DSM activities are funded through Schedule 191, the System Benefits Charge Adjustment collections. Expenditures are charged as incurred and collected through the Systems Benefit Charge. The balancing account is the mechanism used for managing the revenue collected and expenses incurred in the provision of DSM resources. The balancing account activity for 2015 is outlined in Table 3. The end of year balance in the balancing account, on an accrual basis, was an under-collection of expenses of $1.9 million (monies owed the Company).

Table 3
System Benefit Charge Balancing Account Summary

Month	Deferred Expenditures	Schedule 191 Revenue Collected	Carrying Charge	Accumulative Balance	Monthly Net Accrued Costs	Accrual Basis Accumulative Balance
Dec-14				**($265,547)**	**$1,343,028**	**$1,077,481**
Jan-15	$434,702	($1,021,573)	$0	($852,418)	($243,936)	$246,674
Feb-15	$1,047,572	($886,776)	$0	($691,622)	($35,690)	$371,779
Mar-15	$1,343,084	($765,986)	$0	($114,524)	($397,444)	$551,434
Apr-15	$1,180,880	($716,950)	$0	$349,406	($275,697)	$739,667
May-15	$571,484	($735,223)	$0	$185,667	$502,428	$1,078,355
Jun-15	$1,049,211	($805,634)	$0	$429,244	($65,455)	$1,256,478
Jul-15	$987,492	($1,013,351)	$0	$403,385	($52,828)	$1,177,791
Aug-15	$777,201	($934,307)	$0	$246,279	$56,955	$1,077,640
Sep-15	$1,127,418	($952,828)	$0	$420,869	($104,042)	$1,148,187
Oct-15	$850,564	($809,876)	$0	$461,556	$248,691	$1,437,565
Nov-15	$867,734	($831,156)	$0	$498,133	($58,924)	$1,415,219
Dec-15	$1,755,150	($1,057,448)	$0	$1,195,836	($192,096)	$1,920,825
2015 Totals	**$11,992,491**	**($10,531,109)**			**$724,990**	*

* $724,990 is December 2015 Accrual

Column Explanations:

Deferred Expenditures: Monthly expenditures for all program activities posted in 2015, including funding for the Northwest Energy Efficiency Alliance.

Revenue Collected: Revenue collected through Schedule 191, System Benefits Charge Adjustment.

Carrying Charge: On July 29, 2010 in Docket UE-001457, the Commission ordered that the one-way carrying charge on negative balances (balances owing to customers) be eliminated going forward.

Accumulative Balance: A running total of account activities on a "cash" basis. A negative accumulative balance means cumulative revenue exceeds cumulative expenditures; positive accumulative balance means cumulative expenditures exceed cumulative revenue.

Monthly Net Accrued Costs: Two accrual entries are made each month for expenditures of energy efficiency programs. One estimates the incurred cost not yet processed, and the other reverses the estimate from the previous month. The amount shown here is the net of the two entries.

Accrual Basis Accumulative Balance: Current balance of account including accrued costs.

Planning Process

Integrated Resource Plan

The Company develops a biennial integrated resource plan (IRP) as a means of balancing cost, risk, uncertainty, supply reliability/deliverability and long-run public policy goals.[11] The plan presents a framework of future actions to ensure the Company continues to provide reliable, reasonable-cost service with manageable risks to the Company's customers. Energy efficiency and peak management opportunities are incorporated into the IRP based on their availability, characteristics and costs.

Energy efficiency and peak management resources are divided into four general classes:

- Class 1 DSM (Resources from fully dispatchable or scheduled firm capacity product offerings/programs) – Capacity savings occur as a result of active Company control or advanced scheduling. After customers agree to participate, the timing and persistence of the load reduction is involuntary on their part within the agreed limits and parameters.
- Class 2 DSM (Resources from non-dispatchable, firm energy and capacity product offerings/programs) – Sustainable energy and related capacity savings are achieved through facilitation of technological advancements in equipment, appliances, lighting and structures or repeatable and predictable voluntary actions by customers to manage the energy use at their facility or home, also commonly referred to as energy efficiency resources.
- Class 3 DSM (Resources from price responsive energy and capacity product offerings/programs) – Short-duration energy and capacity savings from actions taken by customers voluntarily based on pricing incentives or signals.
- Class 4 DSM (Resources from non-incented behavioral-based savings achieved through broad energy education and communication effort) – Energy and/or capacity reduction typically achieved from voluntary actions taken by customers to reduce costs or benefit the environment through education, communication and/or public pleas.

Class, 1, 2, and 3 DSM resources are included as resource options in the resource planning process. Class 4 DSM actions are not considered explicitly in the resource planning process, however, the impacts are captured naturally in long-term load growth patterns and forecasts.

As technical support for the IRP, a third-party demand-side resource potential assessment (Potentials Assessment) is conducted to estimate the magnitude, timing and cost of energy efficiency and peak management resources.[12] The main focus of the Potentials Assessment is on resources with sufficient reliability characteristics that are anticipated to be technically feasible and assumed achievable during the IRP's 20-year planning horizon. The estimated achievable energy efficiency potential identified in the 2015 Potentials Assessment for Washington is

[11] Information on the Company's integrated resource planning process can be found at the following address: http://www.pacificorp.com/es/irp.html

[12] PacifiCorp Demand-Side Resource Potential Assessment For 2015-2034, http://www.pacificorp.com/es/dsm.html.

948 GWh by 2034, or 21 percent of projected baseline loads.[13] By definition this is the energy efficiency potential that may be achievable to acquire during the 20-year planning horizon; prior to screening for cost-effectiveness through the Company's integrated resource planning process.

The achievable technical potential of Class 2 (energy efficiency) resources for Washington by sector is shown in Table 4. The 2015 Potentials Assessment indicates that approximately nine percent of the achievable technical potential for the Company, excluding Oregon,[14] is available within its Washington service area.[15]

Table 4
Washington Energy Efficiency Achievable Technical Potential by Sector

Sector	Cumulative GWh in 2034	Percent of Baseline Sales
Residential	392	21%
Commercial	395	26%
Industrial	145	13%
Irrigation	13	9%
Street Lighting	3	30%

Demand-side resources vary in their reliability, load reduction and persistence over time. Based on the significant number of measures and resource options reviewed and evaluated in the Potentials Assessment, it is impractical to incorporate each as a stand-alone resource in the IRP. To address this issue, Class 2 DSM measures and Class 1 DSM programs are bundled by cost for modeling against competing supply-side resource options reducing the number of discrete resource options the IRP must consider to a more manageable number.

The evaluation of Class 2 DSM (energy efficiency) resources within the IRP is also informed by state-specific evaluation criteria in the development of supply-curves. While all states generally use commonly accepted cost-effectiveness tests to evaluate DSM resources, some states require variations in calculating or prioritizing the tests:

- Washington, Idaho, and Oregon use the TRC test and consider the inclusion of quantifiable non-energy benefits.
- Oregon and Washington, in addition to considering quantifiable non-energy benefits, apply an additional 10 percent benefit to account for non-quantifiable externalities, consistent with the Northwest Power Act.
- Wyoming and California utilize the standard TRC test excluding quantifiable non-energy benefits and the 10 percent benefit adder Oregon and Washington consider.
- Utah utilizes the UCT as the primary determination of cost effectiveness.

[13] Ibid, Volume 2, page 4-2.
[14] Oregon energy efficiency potentials assessments are performed by the Energy Trust of Oregon.
[15] Volume 1, Page 4-2, PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034.

The Company evaluates program implementation cost-effectiveness (both prospectively and retrospectively) under a variety of tests to identify the relative impact and/or value (e.g. near-term rate impact, program value to participants, etc.) to customers and the Company.

Estimated Peak Contributions

The reported capacity reduction of 6.71 MW (at generation) for energy efficiency programs during 2015 represents the estimated MW impact of the energy efficiency portfolio during PacifiCorp's system peak period. An energy-to-capacity conversion factor developed from Class 2 DSM selections in the 2015 IRP is used to translate 2015 energy savings to estimated demand reduction during the system peak. The utilization of this factor in the MW calculation assumes that the energy efficiency resources acquired through the Company's programs have the same average load profile as those energy efficiency resources selected in the 2015 IRP. Utilization of this factor in determining the MW contribution of energy efficiency programs for 2015 is detailed in Table 5 below.

Table 5
Estimated Peak Contribution

Description	Value
First year Energy Efficiency program MWh savings acquired during 2015	51,802
Conversion factor: Coincident MW/MWh	0.0001296
Estimated coincident peak MW contribution of 2015 Energy Efficiency acquisitions	6.71

Energy Efficiency Programs

Energy efficiency programs were offered to all major customer sectors: residential, commercial, industrial and agricultural. The overall energy efficiency portfolio included five programs: *Home Energy Savings,* Schedule 118*; Home Energy Reports; Residential Refrigerator Recycling,* Schedule 107*; Low Income Weatherization,* Schedule 114*;* and *Non-Residential Energy Efficiency (watt*smart *Business),* Schedule 140. In addition to the energy efficiency programs, the Company, on behalf of customers, invested in outreach and education for the purpose of promoting the efficient use of electricity and improving program performance. Results for 2015 are provided in Table 6.

Table 6
Washington Results January 1, 2015 – December 31, 2015

Program	kWh/Yr Savings (at site)	kWh/Yr Savings (at generator)	aMW Savings (at gen)	Systems Benefits Charge Expenditures
Low Income Weatherization	144,648	158,635	0.02	$ 858,071
Refrigerator Recycling	788,344	864,568	0.10	$ 150,597
Home Energy Savings	12,006,640	13,167,682	1.50	$ 2,597,140
Home Energy Reporting	7,720,142	8,466,680	0.97	$ 340,566
Total Residential Programs	**20,659,773**	**22,657,565**	**2.59**	**$ 3,946,375**
wattsmart Business Agricultural	1,246,917	1,367,494	0.16	$ 114,231
wattsmart Business Commercial	12,977,707	14,214,612	1.62	$ 2,407,788
wattsmart Business Industrial	9,434,502	10,204,452	1.16	$ 1,742,644
Wattsmart Business Portfolio				$ 1,548,468
Total Business Programs	**23,659,126**	**25,786,558**	**2.94**	**$ 5,813,131**
Northwest Energy Efficiency Alliance	3,063,405	3,357,471	0.38	$ 884,208
Total	**47,382,304**	**51,801,593**	**5.91**	**$ 10,643,714**
Portfolio DSM Central				$ 37,749
Portfolio Evaluation				$ 340,244
Portfolio Potential Study				$ 18,007
Portfolio Technical Reference Library				$ 10,056
Portfolio Level Expenditures (DSM Central, TRL, Evaluation and Potential Study)				**$ 406,057**
School Energy Education				$ 61,431
Outreach and Communication				$ 208,268
Total System Benefits Charge expenditures				**$ 11,319,470**

The Company, consistent with requirements under Docket UE-132047, Order 01, Attachment A Paragraph (8)(b), provides Table 7 which compares the Company's 2015 Business Plan Budget update filed on November 1, 2014, to the 2015 Biennial Conservation Plan, to actual 2015 program performance.

In 2015, the Company delivered preliminary results of 51,802 MWh in first year energy savings at generation against the 2015 business plan forecast savings of 59,306 MWh, a negative variance of approximately 13 percent. The largest variances from the plan were due to the following:

- Lower than forecasted participation from the Refrigerator Recycling program which was further amplified by the unavailability of program services in late November and December.
- Lower than expected savings from Home Energy Reports, including the expansion group.
- NEEA savings declined compared to the forecast when the baseline used to develop the Company's 2014-2015 biennial conservation target was used by NEEA for savings reporting.

Table 7: Washington Business Plan Budget[16] compared to Actual[17]

	2015 PacifiCorp Washington Business Plan Budget				2015 PacifiCorp Washington DSM Actual			
Program	kWh/Yr Savings (at site)	kWh/Yr Savings (at generator)	Gross aMW Savings (at gen)	Estimated Systems Benefit Expenditures	kWh/Yr Savings (at site)	kWh/Yr Savings (at generator)	Gross aMW Savings (at gen)	Systems Benefits Charge Expenditures
Low Income Weatherization	150,000	164,505	0.02	$ 900,000	144,648	158,635	0.02	$ 858,071
Refrigerator Recycling	930,863	1,020,877	0.12	$ 254,310	788,344	864,568	0.10	$ 150,597
Home Energy Savings	11,877,460	13,026,010	1.49	$ 2,305,015	12,006,640	13,167,682	1.50	$ 2,597,140
Home Energy Reporting	10,931,580	11,988,664	1.37	$ 478,288	7,720,142	8,466,680	0.97	$ 340,566
Total Residential Programs	**23,889,903**	**26,200,056**	**2.99**	**$ 3,937,613**	**20,659,773**	**22,657,565**	**2.59**	**$ 3,946,375**
wattSmart Business - Agricultural	135,990	149,140	0.02	$ 2,856,020	1,246,917	1,367,494	0.16	$ 230,076
wattSmart Business - Commercial	11,277,055	12,351,871	1.41	$ 3,133,060	12,977,707	14,214,612	1.62	$ 3,648,592
wattSmart Business - Industrial	12,370,955	13,380,549	1.53	$ 34,441	9,434,502	10,204,452	1.16	$ 1,934,463
Total Business Programs	**23,784,000**	**25,881,560**	**2.95**	**$ 6,023,521**	**23,659,126**	**25,786,558**	**2.94**	**$ 5,813,131**
Production Efficiency								
Northwest Energy Efficiency Alliance	6,587,939	7,224,424	0.82	$ 881,334	3,063,405	3,357,471	0.38	$ 884,208
Total Other Conservation Initiatives	**6,587,939**	**7,224,424**	**0.82**	**$ 881,334**	**3,063,405**	**3,357,471**	**0.38**	**$ 884,208**
Be wattsmart, Begin at Home	-	-		$ 59,000				$ 61,431
Customer Outreach/Communication	-	-		$ 250,000				$ 208,268
Program Evaluations	-	-		$ 302,000				$ 340,244
Potential Study Update/Analysis	-	-		$ 75,000				$ 18,007
Measure Data Documentation	-	-		$ 42,465				$ 47,805
Admin of prior programs	-	-						$ -
Total Portfolio-Level Expenses	-	-		**$ 728,465**				**$ 675,756**
Total PacifiCorp Conservation	**47,673,903**	**52,081,616**	**5.95**	**$ 10,689,599**	**44,318,899**	**48,444,122**	**5.53**	**$ 10,435,261**
Total System Benefits Charge Conservation	**54,261,842**	**59,306,040**	**6.77**	**$ 11,570,933**	**47,382,304**	**51,801,593**	**5.91**	**$ 11,319,470**
Total Conservation	**54,261,842**	**59,306,040**	**6.77**	**$ 11,570,933**	**47,382,304**	**51,801,593**	**5.91**	**$ 11,319,470**

[16] Budget from 2014-2015 Business Plan filed November 1, 2014.
[17] SBC expenditures represent total program costs for savings claimed 2015.

Residential Programs

The residential energy efficiency portfolio was comprised of five programs; *Home Energy Savings, Home Energy Reports, Refrigerator Recycling, Low Income Weatherization, and NEEA.* As shown in Table 8, the residential portfolio was cost effective based on four of the five standard cost effectiveness tests for the reporting period. The ratepayer impact test was less than 1.0 indicating that there is near term upward pressure placed on the price per kilowatt-hour given a reduction in sales.

Table 8
Cost Effectiveness for Residential Portfolio[18] (includes non-energy benefits)

	B/C Ratio with NEEA	B/C Ratio without NEEA
PacifiCorp Total Resource Test plus 10%	2.05	2.13
Total Resource Cost Test	1.93	2.00
Utility Cost Test	2.32	2.52
Participant Cost Test	3.71	3.56
Rate Payer Impact	0.55	0.57

Total Company residential savings increased 12 percent, from 18,252,521 kWh in 2014 to 20,659,773 kWh in 2015 excluding NEEA. Individual program performance, program management and program infrastructure is provided on the following pages.

[18] Excludes Low Income Weatherization.

Home Energy Savings

The *Home Energy Savings* program is designed to provide access to and incentives for more efficient products and services installed or received by customers in new or existing homes, multi-family housing units or manufactured homes. The program was cost effective as shown in Table 9.

Table 9
Cost Effectiveness for *Home Energy Savings* [19] *(includes non-energy benefits)*

	B/C Ratio
PacifiCorp Total Resource Test plus 10%	2.21
Total Resource Cost Test	2.08
Utility Cost Test	2.79
Participant Cost Test	3.31
Rate Payer Impact	0.60

Program participation by measure category is provided in Table 10.

Table 10
Eligible Program Measures (Units)

Measure Category	Total kWh/Yr Savings	Total Incentive	Total Quantity
Appliances	22,203	$8,940	201
Building Shell	273,910	$83,046	264,738 (sq ft)
Energy Kits	2,300,906	$100,128	6,783
HVAC	2,108,185	$670,739	1,205
Lighting	7,241,052	$864,830	376,079
Water Heating	60,384	$34,756	75
Total	**12,006,640**	**$1,762,438**	**649,081**

Program Management

The program manager who is responsible for the program in Washington is also responsible for the *Home Energy Savings* program in California and *Home Energy Reports* program in Washington. For each program and in each state the program manager is responsible for the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in the tariff and/or posted on the Company's website.

[19] Includes Non-Energy Benefits.

Program Administration

The *Home Energy Savings* program is administered by CLEAResult. CLEAResult is responsible for the following:

- Retailer and trade ally engagement – CLEAResult identifies, recruits, supports and assists retailers to increase the sale of energy efficient lighting, appliances and electronics. CLEAResult enters into promotion agreements with each lighting manufacturer and retailer for the promotion of discounted CFL and LED bulbs. The agreements include specific retail locations, lighting products receiving incentives and not-to-exceed annual budgets. Weatherization and HVAC trade allies engaged with the program are provided with program materials, training, and regular updates.
- Inspections – CLEAResult recruits and hires inspectors to verify on an on-going basis the installation of measures. A summary of the inspection process is in Appendix 2.
- Incentive processing and call-center operations – CLEAResult receives all requests for incentives, determines whether the applications are completed, works directly with customers when information is incorrect and/or missing from the application and processes the application for payment.
- Program specific customer communication and outreach – A summary of the communication and outreach conducted by CLEAResult on behalf of the Company is outlined in the Communication, Outreach, and Education section.

The contract for *Home Energy Savings* program administration services for all states expires in early 2016. In 2015, the Company initiated a request for proposal and a new contract will be in place in early 2016.

Infrastructure

The total number of participating retailers participating in the program is currently 174. The current count of participating retailers by delivery channel and measure type is provided in Appendix 3.

Program Changes

There were no changes in program incentive offers or eligibility requirements in 2015. During the last two quarters of 2015, CLEAResult assisted the Company in identifying program changes for the 2016-2017 biennial period.

Evaluation

A process and impact evaluation for program years 2013-2014 is currently being conducted by a third party evaluator. The evaluation results will be available in 2016.

Home Energy Reports

The *Home Energy Reports* program is a behavioral program designed to decrease participant energy usage by providing comparative energy usage data for similar homes located in the same geographical area. Additionally, the report provides the participant with information on how to decrease their energy usage. Equipped with this information, participants can modify behavior and/or make structural equipment, lighting or appliance modifications to reduce their overall electric energy consumption.

Reports were initially provided to approximately 13,500 customers (referred to as "legacy" group). The number of participant's decreases over time due to customer attrition from general customer churn (customer move-outs)[20] and customers requesting to be removed from the program. In 2014, program changes were approved extending the program through December 2017 and expanding the program to 38,500 additional customers (referred to as "expansion" group)[21]. These customers received their initial reports in October 2014. An additional expansion of 6,626 customers (referred to as "legacy refill" group) was added in January 2015 to offset attrition and lower energy savings than expected from the initial legacy group.

Monthly reports are mailed to all new program participants for the initial three months in order to build program awareness. Following this initial three month period, report frequency is moved to a bi-monthly schedule for the remainder of the program. All participating customers may request an electronic version delivered via email and have access to a web portal containing the same information about their usage and past usage provided in the report. The web portal also contains other functions such as a home energy audit tool, the ability for customers to update their home profile (for more accurate comparisons) and suggestions on more ways to save energy around their home.

Due to the underachieved performance of the expansion group against the guaranteed savings per the negotiated contract terms, the combined program results was not cost effective as shown in Table 11 below. These results include a $100,000 credit applied to the expansion group. Legacy and legacy refill was cost effective.

Table 11
Cost Effectiveness for *Home Energy Reports*

	B/C Ratio Combined	B/C Ratio Legacy + Refill Groups	B/C Ratio Expansion Group
PacifiCorp Total Resource Test plus 10%	0.94	1.30	0.69
Total Resource Cost Test	0.86	1.18	0.62
Utility Cost Test	0.86	1.18	0.62
Participant Cost Test	N/A	N/A	N/A
Rate Payer Impact Cost Test	0.28	0.31	0.25

[20] As of the end of 2015 approximately 10,100 customers in the legacy group were still participating and receiving home energy reports.
[21] As of the end of 2015, approximately 32,000 customers in the expansion group were still participating and receiving home energy reports.

Program savings by group for January 1, 2015 – December 31, 2015 is provided in Table 12.

Table 12
Program Savings

Home Energy Reports Group	Total kWh/Yr Savings @ site
Legacy	4,360,298
Legacy Refill	96,035
Expansion Group	3,263,809
Total	**7,720,142**

Program Management

The program manager overseeing program activity in Washington is also responsible for *Home Energy Savings* program in California and Washington. For each program and in each state the program manager is responsible for the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set in each state's compliance requirements.

Program Administration

The *Home Energy Reports* program is administered by Opower. Opower's software creates individualized energy reports for utility customers that analyze their energy usage and offers recommendations on how to save energy and money by making small changes to their energy consumption. The Company contracts with Opower to provide energy savings, software services, and printing and delivery of energy reports to customers.

Opower is responsible for the following:

- Selecting Qualifying Customers – Opower conducts an analysis to identify qualifying customers. An independent, third party administrator then randomly assigns qualifying customers into the program's treatment (those who will receive reports) and control groups (for measurement and verification).
- Customer Comparison Analysis – Opower conducts statistical analysis to perform pattern recognition in order to derive actionable insights to selected customers.
- Energy Report Delivery – By mail and/or email.
- Web Portal Design and Support – Opower operates and maintains a customer Web portal that participants may visit for additional information about their energy usage and saving opportunities.

Evaluation

In 2015, a process and impact evaluation was initiated by a third party evaluator for the period of January 1, 2014 – December 31, 2015. The legacy, refill and expansion waves were evaluated. The primary objective of the evaluation report was to determine the extent to which participants

in the Home Energy Reports program reduced their energy consumption due to the program which would be applied to the 2014-2015 Conservation Report. Secondary objectives are to report on customer satisfaction with the program, and on behavioral and information effects of the program. Once published, the results of the evaluation can be viewed at: www.pacificorp.com/es/dsm/washington.html.

Refrigerator Recycling

The *Refrigerator Recycling* (also known as "See ya later, refrigerator®) program was designed to decrease electricity use (kWh) through voluntary removal and recycling of inefficient refrigerators and freezers. The program was available to residential, businesses and appliance retailers. Customers received a $30 incentive for each qualifying refrigerator or freezer recycled through the program and an energy-saving kit which included two CFLs, a refrigerator thermometer card, energy-savings educational materials, and information on other efficiency programs relevant to residential customers Retailers received an incentive up to $20 for each recycled appliance. The program was cost effective in 2015 as shown in Table 13 based on planned 2014-2015 UES values.

Table 13
Cost Effectiveness for Refrigerator Recycling

	B/C Ratio
PacifiCorp Total Resource Test plus 10%	1.81
Total Resource Cost Test	1.65
Utility Cost Test	1.65
Participant Cost Test	N/A
Rate Payer Impact Cost Test	0.44

Program participation by measure for the current period is provided in Table 14.

Table 14
Eligible Program Measures (Units)

Measure Category	Total kWh/Yr Savings @ Site	Total Incentive	Total Quantity
Energy Savings Kit	32,973	$6,968	1,173
Freezer Recycling	125,730	$7,620	254
Refrigerator Recycling	623,810	$32,100	1,070
Refrigerator Recycling (residential used in a business)	5,830	$300	10
Grand Total	**788,343**	**$46,988**	**2,507**

In 2015, more than 70 tons (141,125 pounds) of steel, 2 tons (5,645 pounds) of aluminum and copper, 11 tons (22,508 pounds) of plastics were recycled as a result of the program, reducing landfill deposits by an amount sufficient to cover an entire football field more than two and a half feet deep. In addition, the chlorofluorocarbons (greenhouse gases) collected and destroyed during recycling equates to approximately 3.6 tons (4,113 metric tons for 1,129 units) of carbon dioxide equivalents per unit, equivalent to the annual emissions of the average car in the U.S.

Program Management

The program manager responsible for the program in Washington was also responsible for the program in California. For each program and in each state, the program manager is responsible for the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in the tariff.

In the fourth quarter of 2014, the program manager identified media placement expenditures were paid twice in all states between 2013 and 2014. The media placement expenditures were paid to JACO and the Company's media vendor. Accordingly, JACO issued a credit to the program in 2015 which was allocated to all states based upon the percentage of media expenditures incurred.

Program Administration

The *Refrigerator Recycling* program was administered by JACO Environmental (JACO) in 2015. JACO was one of the largest recyclers of house-hold appliances in the United States until going out of business in the fourth quarter of 2015. The Company contracted with JACO to provide customer scheduling, pick-up, incentive processing and marketing services for the *See ya later, refrigerator* program.

JACO was responsible for the following:

- Appliance Pick-up – JACO handled all customer and field service operations for the program, including pick-up of refrigerators and freezers from customers and transporting units to the de-manufacturing facility.
- Incentive processing and call-center operations – Customer service calls, pick-up scheduling and incentive processing.
- Program specific customer communication and outreach – Working in close coordination with the Company, JACO handled all the marketing for the program. The program was marketed through bill inserts, customer newsletters and TV, newspaper and online advertising.

As part of the program control process, the Company contracted with third-party independent inspectors to conduct ongoing oversight of the program's appliance recycling process, from verification that the units being recycled met the program eligibility criteria to verifying they were being recycled and that the program records were accurate.

A summary of the inspection process is included in Appendix 2.

Program Changes

As part of the planning process for the 2016-2017 biennial period, the Company filed Advice No. 15-04 to cancel Schedule 107 effective January 1, 2016, based on forecasted sub-optimal cost effectiveness utilizing new (and lower) unit energy savings from the Company's program evaluation. The Washington Utilities and Transportation Commission placed this request on the consent agenda and approved it at the December 30, 2015 open meeting.

In November 2015, the Company was notified by JACO that they entered into a voluntary receivership, pickups were cancelled and operations had ceased. The Company immediately posted this information on the program web site and utilized another vendor to contact the affected customers to inform them the pickup was cancelled. Initial data indicates this impacted 29 Washington customers. The Company also learned that JACO bank accounts had been closed impacting the cashing of checks and customers who were recent participants would experience delays in receiving their checks.

On November 30, 2015, the Company notified the DSM Advisory Group of the recent developments with JACO and the unavailability of the program offer ahead of the scheduled suspension of the program and the Company's plan to use the program change process to suspend the appliance recycling offer and allow time to evaluate the options.

The Company developed a process to pay outstanding incentives and any bank fees incurred by customers. The process was communicated to affected customers on December 9, 2015.

During December 2015, the Company began an expedited sole source procurement process to contract for remedial or "clean-up" appliance recycling services. This provider would contact customers who had pick-ups scheduled with JACO that were cancelled in late November and December and if the customer was still interested, offer the same removal service and incentive. A contract with Appliance Recycling Centers of America (ARCA) was executed in late December and customer outreach began in January 2016. Final costs and savings reported from the final recycled units will be included in the 2016 reporting period.

Evaluation

A process and impact evaluation for program years 2013-2014 was in process by a third party evaluator during 2015. The impact results were made available to the Company in 2015 to assist with the 2016-2017 planning process.

Low Income Weatherization

The *Low Income Weatherization* program provides energy efficiency services through a partnership between the Company and local non-profit agencies to residential customers who meet income-eligible guidelines. Services are at no cost to the program participants. Cost effectiveness for the Low Income Weatherization program was not included in the portfolio or sector-level analysis per WAC 480-109-100 (10)(b).

Total homes treated under the program in 2015, as well as the type and frequency of specific energy efficiency measures installed in each home, is provided in Table 15.

Table 15
Eligible Program Measures (Units)

	2015 Total
Participation – Total # of Completed/Treated Homes	**98**
Number of Homes Receiving Specific Measures	
Aerators	55
Attic Ventilation	63
Caulk/Weather-stripping	68
Ceiling Insulation	39
Compact Fluorescent Light bulbs	85
Duct Insulation	54
Floor Insulation	85
Fluorescent Light Fixture	16
Ground Cover	71
Infiltration	95
Repairs	34
Replacement Refrigerators	5
Showerheads	55
Thermal Doors	1
Timed Thermostat	14
Wall Insulation	15
Water Heater Replacement	4
Water Pipe Insulation and Sealing	76

Program Management

The program manager overseeing program activity in Washington is also responsible for the *Low Income Weatherization* programs in California, Idaho, Utah, and Wyoming; the bill discount programs in Washington, California, and Utah; and energy assistance programs in Washington, California, Idaho, Oregon, Utah, and Wyoming. For each program and in each state, the program manager is responsible for the cost effectiveness of the energy efficiency programs, partnerships, and agreements in place with local agencies that serve income eligible households, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in the tariff.

Program Administration

The Company partners with three local non-profit agencies to provide weatherization services to income-qualifying households throughout its Washington service territory. These agencies include Blue Mountain Action Council located in Walla Walla, Northwest Community Action Center in Toppenish, and Opportunities Industrialization Center of Washington in Yakima. The leveraging of Company funding along with Washington Match Maker Program funds allows the agencies to provide these energy efficiency services to more households at no cost to participating customers. The Company provides rebates to partnering agencies for 50 percent of the cost of services while Match Maker funds are available, and will cover 100 percent of costs when these state funds are depleted. In 2015, 45 homes were funded at 50 percent and 53 at 100 percent. Participants qualify if they are homeowners or renters residing in single-family homes, manufactured homes, or apartments. Over 7,300 homes have been completed since the program's inception in the mid-1980s.

By contract with the Company, the agencies are responsible for the following:

- Income Verification – Agencies determine participants are income eligible based on Washington Department of Commerce guidelines. Households interested in obtaining weatherization services apply through the agencies. The 2015 income guidelines can be viewed on the Washington Department of Commerce website[22].
- Energy Audit – Agencies use a U.S. Department of Energy approved audit tool or priority list to determine the cost effective measures to install in the participant's homes (audit results must indicate a savings to investment ratio of 1.0 or greater).
- Installation of Measures – Agencies install the energy efficiency measures.
- Post Inspections – Agencies inspect 100 percent of completed homes. A sample of 5 -10 percent are inspected by a Pacific Power inspector. See Appendix 2 for verification summary.
- Billing Notification – Agencies are required to submit a billing to Company within 90 days after job completion. A homeowner agreement and invoice form indicating the measures installed and associated cost is submitted on each completed home.

Evaluation

A process and impact evaluation was completed by a third party evaluator for program years 2011-2012 and can be found on the Company's website[23]. Several key findings from this evaluation include:

- The program is operating as planned.
- The program exemplifies a utility best practice in that it is coordinated with United States Department of Energy, United States Department of Health and Human Services and Washington Department of Commerce. The partnership leverages each utility dollar to serve low income customers.
- The partnership between Low Income Home Energy Assistance and Weatherization Assistance Program is beneficial to both programs.

[22] http://www.commerce.wa.gov/Documents/HIP-Weatherization-2015-Income-Eligibility-Guidelines.pdf
[23] http://www.pacificorp.com/es/dsm/washington.html

Northwest Energy Efficiency Alliance

The *Northwest Energy Efficiency* Alliance (NEEA) is a non-profit corporation that works collaboratively with its funders and other strategic market partners to accelerate the innovation and adoption of energy-efficient products, services, and practices. NEEA is supported by the Bonneville Power Administration, Energy Trust of Oregon, and more than 100 Northwest utilities, including Pacific Power. For the 2015-2019 funding cycle, NEEA forecasts the region will achieve 145 aMW[24] of total regional savings.

Program performance for 2015 is being reported based on NEEA's preliminary results for Pacific Power of 3,063 MWh (at site) for the Company's funding investment of $884,208. Consistent with the reporting convention approved in Docket UE-132047, the savings represent Pacific Power's portion of Total Regional Savings less the Company's local program savings (adjustment to total movement in the market baseline for measures impacted by NEEA's efforts to account for savings already captured and reported through Pacific Power's Washington programs).

Program Administration

The Company has a representative on the NEEA board of directors as well as representatives on each of the sector advisory committees, residential, commercial and industrial. The Company also has representation on NEEA's broader Regional Portfolio Advisory Committee and participants in the regional Northwest Research Group. Collectively the representatives work collaboratively with the other funders, advisory group members, and NEEA to direct the efforts of NEEA in the best interest of the region in the achievement of the region's market transformation objectives.

[24] Northwest Energy Efficiency Alliance 2015-2019 Business Plan, July, 2014, http://neea.org/docs/default-source/default-document-library/neea-2015-19-business-plan---board-approved.pdf?sfvrsn=2. This is in addition to the estimated 750 aMW of total regional savings expected to be delivered during the same period of time as a result of prior market transformation investments made in NEEA.

Non-Residential Energy Efficiency

The *Non-Residential Energy Efficiency* program is promoted to the Company's commercial, industrial and agricultural customers as *watt*smart Business[25].

The *watt*smart Business program is intended to maximize the efficient utilization of electricity for new and existing non-residential customers through the installation of energy efficiency measures and energy management protocols. Qualifying measures are any measures which, when implemented in an eligible facility, result in verifiable electric energy efficiency improvements.

The program was cost effective in 2015 as shown in Table 16 below.

Table 16
Cost Effectiveness for *watt*smart Business

	Benefit/Cost Ratio
PacifiCorp Total Resource Test plus 10 percent	1.61
Total Resource Cost Test	1.47
Utility Cost Test	2.42
Participant Cost Test	2.93
Rate Payer Impact Test	0.61

Projects completed in the current period by customer sector are provided in Table 17.

Table 17
Projects Completed

Sector	Total kWh/Yr Savings @ Site	Total kW Savings @ Site	Total Incentive	Total Projects
Agricultural	1,246,917	354	$107,568	34
Commercial	12,977,707	1,560	$2,088,878	381
Industrial	9,434,502	518	$970,771	45
Total	**23,659,126**	**2,431**	**$3,167,218**	**460**

[25] The program brochure is available at https://www.pacificpower.net/content/dam/pacific_power/doc/Business/Save_Energy_Money/WA_wattsmartBusiness_Brochure.pdf . Program detail (in addition to the program tariff, Schedule 140) maintained on the Company website is available at https://www.pacificpower.net/content/dam/pacific_power/doc/Business/Save_Energy_Money/WA_wattsmartBusiness_Incentive_tables_information.pdf.

Program performance by measure category is provided in Table 18.

Table 18
Program Performance by Measure Category[26]

Measure Category	Total kWh/Yr Savings @ Site	Total kW Savings @ Site	Total Incentive	Total Projects
Building Shell	18,041	-	$12,530	11
Compressed Air	1,529,031	52	$185,919	8
Electronics	223,304	48	$15,176	3
Energy Management	1,200,710	46	$24,014	3
Food Service Equipment	254,555	34	$16,562	15
HVAC	503,203	35	$43,530	19
Irrigation	1,141,041	351	$91,416	32
Lighting	11,747,894	1,508	$1,971,335	334
Motors	417,360	25	$56,956	10
Refrigeration	6,623,987	333	$749,780	25
Grand Total	**23,659,126**	**2,431**	**$3,167,218**	**460**

Services and incentives offered through the *watt*smart Business program include:

- Typical Upgrades: Incentives for lighting, HVAC, compressed air and other equipment upgrades that increase electrical energy efficiency and exceed energy code requirements.
- Custom analysis: Offers energy analysis studies, services and incentives for more complex projects.
- Energy Management: Provides expert facility and process analysis and incentives to help lower energy costs by optimizing customer's energy use.
- Energy Project Manager Co-funding: Available to customers who commit to an annual goal of completing energy projects resulting in at least 1,000,000 kWh/year in energy savings.
- Enhanced incentives for small businesses: Provides enhanced incentives for lighting upgrades installed by an approved *watt*smart Small Business Contractor at an eligible existing small business customer facility.
- Midstream/LED Instant Incentive: Provides instant, point-of-purchase incentive for LED lamps and retrofit kits sold through qualifying participating distributors. Customers purchasing lamps from non-participating suppliers can apply for incentives after purchase.

Program Management

The program manager overseeing program activity in Washington is also responsible for the business energy efficiency programs in California. For each state the program manager is

[26] The total count of projects is less than the sum of the measure category counts because a project can have measures in more than one category.

responsible for the cost effectiveness of the program, identifying and contracting with the program administrators through a competitive bid process, program marketing, establishing and monitoring program performance and compliance, and recommending program changes.

Program Administration

The program includes several delivery channels, including Trade Ally, Small Business Enhanced Incentive Offer, LED Instant Incentive and Project Manager delivery.

Trade Ally
In this channel, the program is primarily marketed through local trade allies who receive support from one of two program administrators. The Company contracts with Nexant, Inc. (Nexant) and Cascade Energy (Cascade) for trade ally coordination, training and application processing services for commercial measures and industrial/agricultural measures, respectively.

Nexant and Cascade are responsible for the following:

- Trade ally engagement – identify, recruit, train, support and assist trade allies to increase sales and installation of energy efficient equipment at qualifying business customer facilities.
- Incentive processing and administrative support – handle incoming inquiries as assigned, process incentive applications, develop and maintain simplified analysis tools and provide program design services, evaluation and regulatory support upon request.
- Direct customer outreach and project facilitation for smaller customer projects
- Inspections – verify on an on-going basis the installation of measures[27]. Summary of the inspection process is in Appendix 2.

Small Business Enhanced Incentive Offer
In this channel, the program is primarily marketed through local contractors approved specifically for this offer who receive support from the program administrator, Nexant. Nexant is responsible for the following:

- Management of approved contractors – identify, recruit, contract with, train, support, and assist contractors to increase sales and installation of energy efficient lighting equipment at qualifying small business customer facilities.
- Incentive processing and administrative support – handle incoming inquiries as assigned, process incentive applications, develop and maintain simplified analysis tool and provide program design services, evaluation and regulatory support upon request.
- Inspections – verify on an on-going basis the installation of measures. Summary of the inspection process is in Appendix 2 to this report.

[27] The Company contracts with firms from the energy engineering consultant list to perform required pre- and post-installation inspections for lighting projects.

Midstream/LED Instant Incentive Offer
In this channel, the program is primarily marketed through distributors approved specifically for this offer who receive support from the program administrator, Nexant. Nexant is responsible for the following:

- Management of approved distributors – identify, recruit, contract with, train, support, and assist distributors to increase sales of energy efficient lighting equipment at qualifying business customer facilities.
- Incentive processing and administrative support – handle incoming inquiries as assigned, process incentive applications, and provide program design services, evaluation and regulatory support upon request.
- Inspections – verify on an on-going basis the installation of measures at eligible customer facilities. Summary of the inspection process is in Appendix 2 to this report.

Project Manager
In this channel, the Company's project manager manages a subset of more complex projects. The project manager works directly with the customer or through the Company's regional business managers[28]. The project manager provides customers with program services and incentives using a pre-contracted group of energy engineering consultants. A current list of these consultants is included in the Infrastructure section below.

The *watt*smart Business program administration contracts expire in 2016 for all states. As a result, the Company initiated a request for proposal in 2015 and new contracts will be in place by mid-2016.

Infrastructure

To help increase and improve the supplier and installation contractor infrastructure for typical energy efficient equipment and services, the Company established and continues to develop and support trade ally networks for lighting, HVAC, motors/VFDs and irrigation. This work includes identifying and recruiting trade allies, providing program and technical training and providing sales support on an ongoing basis. The current lists of the trade allies who have applied and been approved as participating *watt*smart Business vendors are posted on the Company website[29] and is included as Appendix 5 to this report. In most cases, customers are not required to select a vendor from these lists to receive an incentive[30].

The total number of participating trade allies is currently 80. The current counts of participating trade allies by technology are in Table 19.

[28] Regional business managers are responsible for directly working with Washington commercial and industrial/ag customers.
[29] Searchable participating vendor lists are available from the Company website. Direct link to the "Find a Vendor" search tool: http://pacificpower-tradeally.energyefficiencyalliance.net/tradeally/jspx/Contractor_Search/ContractorSearch.jspx
[30] For the wattsmart Small Business enhanced incentives, customers are required to choose one of the approved contractors for this offer.

Table 19
Participating Trade Allies[31]

Lighting	HVAC	Motors and VFD	Irrigation	Small Business – approved contractors	LED Instant Incentive – approved distributors
67	31	49	5	7	7

For the project manager delivery channel supporting larger customers, a pre-approved, pre-contracted group of engineering firms can be used to perform facility specific energy efficiency analysis, quality assurance and verification. Table 20 lists the engineering firms currently under contract with the Company and providing services in five states.

Table 20
Energy Engineering Firms

Engineering Firm	Main Office Location
Abacus Resource Management Company	Beaverton, OR
Brendle Group	Fort Collins, CO
Cascade Energy	Portland, OR
Compression Engineering Corp	Beaverton, OR
Ecova	Portland, OR
EMP2, Inc	Richland, WA
Energy Resource Integration, LLC	Sausalito, CA
Energy and Resource Solutions	North Andover, MA
EnerNOC Inc.	Portland, OR
EnSave, Inc.	Richmond, VT
ETC Group, Inc.	Salt Lake City, UT
Evergreen Consulting Group	Portland, OR
Fazio Engineering	Weston, OR
kW Engineering, Inc.	Oakland, CA
Lincus Inc.	Tempe, AZ
Nexant, Inc.	Portland, OR
RM Energy Consulting	Pleasant Grove, UT
Rick Rumsey, LLC	Ammon, ID
SBW Consulting, Inc.	Bellevue, WA
Solarc Architecture & Engineering, Inc.	Eugene, OR
Triple Point Energy	Portland, OR

Program Changes

On October 1, 2014 a new Small Business Lighting incentive offer became effective for customers. This program offers enhanced incentives for up to 80 percent of the cost of lighting upgrades, and is available to small business customers on approved rate schedules. Approved Small Business lighting contractors are the primary means of marketing the incentive offer using a variety of approaches including door-to-door and co-branded marketing materials.

[31] Some trade allies may participate in more than one technology so the count of unique participating firms is less than the total count provided above.

Effective June 1, 2015, the program added midstream lighting as a new delivery channel. This offering provided an instant, point-of-purchase discount for LEDs and retrofit kits sold through qualifying local distributors.

Evaluation

A process and impact evaluation was completed by a third party evaluator for program years 2012 - 2013 for the Energy FinAnswer and FinAnswer Express programs (program names prior to the consolidated *watt*smart Business name change). The evaluations can be found on the Company's website[32]. Several key findings from this evaluation include:

- Program satisfaction was high for participants and near-participants.
- Program managers and administrators effectively used available resources and capacity to implements the program.
- Participants report experiencing non-energy benefits stemming from their projects.
- Trade allies were generally satisfied with the Energy Efficiency Alliance and the program's effect on their business.

[32] http://www.pacificorp.com/es/dsm/washington.html

Communications, Outreach and Education

The Company utilizes earned media, customer communications, paid media and program specific media in an effort to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures, and to educate customers on the availability of technical assistance, services, and incentives. The overall goal is to engage customers in reducing their energy usage through behavioral changes as well as changes in equipment, appliances and structures.

Earned Media

Earned media is managed by the Company's external communications department in cooperation with the regional business managers located in Washington. "Earned media" generally refers to favorable television, radio, newspaper, or internet news coverage gained through press releases, media events, opinion pieces, story pitches, or other communication with news editors and reporters.

Customer Communications

As part of the Company's regular communications to its customers, newsletters across all customer classes promote energy efficiency initiatives and case studies on a regular basis. Inserts and outer envelopes featuring energy efficiency messages have also been used on a consistent basis. In 2015, the Company issued two newsletters focused entirely on seasonal energy efficiency information (in the fall and spring).

The Company uses its website and social media, such as Twitter and Facebook to communicate and engage customers on DSM offers and incentives.

Paid Media/wattsmart campaign

In 2015 the Company continued with the multi-faceted campaign with programs aimed at specific customer groups, but all share the common theme: Pacific Power wants to help you save money and energy by being *watt*smart. This communication campaign aims to create awareness of the importance of being energy efficient, and to help increase participation in the Company's DSM programs.

Based on 2015 customer awareness campaign research conducted by Marketing Decisions Corporation:

- Thirty-nine percent of customers surveyed in 2015 in Washington are aware that the Company offers energy efficiency programs.
- Top recalled messages: using energy wisely and energy efficiency programs.
- Seventy-four percent of customers surveyed in 2015 in Washington are aware of *watt*smart.
- Three in ten customers report having taken action based on the Company's advertising (32 percent). The most frequently mentioned actions:

- Purchased/switched to energy-efficient appliances/lights.
- Turning off lights/appliances when not in use.
- More aware of power usage.
- Enlisting in utility incentive/rebate program.

Key strategies with this plan, keeping objectives and budgets in the forefront included:

- Implementing an advertising campaign featuring *watt*smart energy efficiency messaging.
- Promoting customer conservation (behavioral changes) and increasing participation and savings through the Company's *watt*smart DSM programs.
- Motivating customers to reduce consumption independently or to do so by participating in at least one of the Company's *watt*smart DSM programs.
- Educating customers on how these programs can help them save money on their utility bills, reduce energy consumption, and keep costs down for all customers in Washington.

The *watt*smart advertising campaign is comprised of a multi-media mix designed to reach as many customers as possible with the greatest frequency. Various communications channels were utilized to optimize effectiveness, frequency and coverage and to build on the messages. Table 21 outlines the Washington media channels used, the value of each channel, and the impressions achieved to date.

Table 21
2015 Media Channels

Communication Channel	Value to Communication Portfolio	2015 Placements
Television	Television has the broadest reach and works as the most effective media channel	4,635,800 impressions
Radio	Given the cost relative to television, radio builds on communications delivered via television while providing for increased frequency of messages	2,472,100 impressions
Newspaper/Magazine	Supports broadcast messages and guarantees coverage in areas harder to reach with broadcast	987,958 impressions
Online advertising	Digital display and Google Search	3,935,132 impressions and 55,991 search impressions
Facebook Advertising	Advertising on Facebook	639,405 impressions
Twitter @PacificPower_WA	Awareness for early adopters regarding energy efficiency tips Tweets posted on a weekly basis	626 followers through December 2015
Facebook www.facebook.com/pacificpower.wattsmart	Awareness for early adopters regarding energy efficiency tips and a location to share information	16,741 fans through December 2015 (for all Pacific Power states)

The total number impressions for the campaign in 2015 were 12,726,386.

Links to the Company's current portfolio of advertisements is included in Appendix 4.

The audiences for these messages were prioritized as follows:

- Primary: Households in Pacific Power's service area.
- Secondary: Small and large business in Pacific Power's service area.

Program Specific

All energy efficiency program communications are branded under the *watt*smart umbrella to reinforce the campaign and to link changes in behavior to actions customers can take by participating in specific programs. Separate marketing activities administered by and specific to the programs ran in conjunction with the *watt*smart campaign in 2015.

Home Energy Savings

Information on the *Home Energy Savings* program is communicated to customers, retailers and trade allies through a variety of channels.

Using a strategic approach, the Company communicates select program measures during key selling seasons and promotes wattsmart Starter Kits to targeted customers throughout the year to achieve savings goals.

In April, the Company promoted specially priced LED bulbs, which were available in three-packs for $5 at participating Washington retailers. The offer was communicated through an employee email, website and social media.

Messaging shifted to cooling as summer approached. The Company provided information on shopping for a new room air conditioner and highlighted discounts available at local retailers. In June and July, the Company promoted ductless heat pumps and provided detailed information on the website to educate customers about the benefits of these high-efficiency heating and cooling systems. Customers received information about incentives for ductless heat pumps and insulation through a bill insert, website and social media.

Throughout the year, targeted customer communications were distributed to promote *watt*smart Starter kits through direct mail, email, bill insert, digital ads and Facebook ads. To reach a broader audience, the company sent a direct mail piece in English and Spanish.

In 2015, program communications delivered approximately 543,046 impressions. Breakdown of estimated impressions by channel are shown in Table 22 below. These estimates do not reflect all of the customer, retailer and trade ally touchpoints.

Table 22
Impressions by Channel

Communications Channel	2015 Estimated Impressions
Facebook ads	220,746
Bill inserts	273,000
Direct mail	22,300
Email	27,000

Home Energy Reports

Home Energy Reports were mailed to about 48,000 customers several times throughout 2015. Many of these customers also receive email reports with customized energy-saving tips. In addition, customers can access the program Web portal with additional tools, insights and ways to save energy.

Refrigerator Recycling

In 2015, *See ya later, refrigerator®* communications consisted of TV, print and digital advertising, bill inserts and social media.

On November 23, 2015, Pacific Power received notice that program vendor JACO was going out of business. The Company posted a notice on the website to let customers know the program was suspended until further notice. Affected customers also received a direct mail letter and an email to let them know about the situation and that the Company would have replacement incentive checks issued, if necessary.

*watt*smart Business

In 2015, customer communications and outreach supported *watt*smart Business utilizing radio, print, paid digital display and search advertising, direct mail, email and social media. This was in addition to customer direct contact by Company project managers and regional community managers, as well as trade ally partners; articles in the Company newsletters and content on the Company's website.

Working with the Sunnyside, Washington Chamber of Commerce and the Central Washington Hispanic Chamber, "lunch and learn" events focused on lighting were held in September to inform small and mid-size business customers about incentives for upgrades.

In June, a bill insert focused on energy savings and incentives for cooling systems was inserted in bills for business customers (excluding irrigation). During the same period, an email on cooling was sent.

During 2015, radio communications encouraged business customers to make energy efficiency upgrades and print ads featured case study examples from program participants which were repurposed in social media. Quarterly eblasts and digital search ads directed viewers to the company's website[33]. Targeted direct mail was sent to irrigation and compressed air customers to encourage upgrades. In 2015, the program garnered 2,971,762 impressions. A breakdown of impressions by media type is shown in Table 23.

[33] www.pacificpower.net/wasave

Table 23
*watt*smart Business

Communications Channel	2015 Impressions
Radio	1,727,000
Newspaper	824,126
Magazine	275,310
Digital Display	116,298
Google Search	10,360
Eblasts	7,400
Bill inserts	8,556
Direct Mail	2,712

Energy Education in Schools

The Company offers a *watt*smart Schools education program through the National Energy Foundation (NEF). The program is designed to develop a culture of energy efficiency among teachers, students, and families. The centerpiece is a series of one hour presentations with hands-on, large group activities for 4th and 5th grade students. Teachers are provided instructional materials for use in their classrooms, and students are sent home with a Household Report Card to explore energy use in their homes and to encourage efficient behaviors.

In 2015, NEF conducted presentations in Washington schools in the fall.

- Between October 12 and November 13, 2015, the program met its outreach goals of reaching 4,127 students and 152 teachers in 50 schools with 62.73 percent of "Household Report Cards", which are used as part of a home energy audit activity, completed and returned.

Evaluations

Evaluations are performed by independent external evaluators to validate energy and demand savings derived from the Company's energy efficiency programs. Industry best practices are adopted by the Company with regards to principles of operation, methodologies, evaluation methods, definitions of terms, and protocols including those outlined in the National Action Plan for Energy Efficiency Program Impact Evaluation and the California Evaluation Framework guides.

A component of the overall evaluation effort is aimed at the reasonable verification of installations of energy efficient measures and associated documentation through review of documentation, surveys and/or ongoing onsite inspections.

Verification of the potential to achieve savings involves regular inspection and commissioning of equipment. The Company engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results. A summary of the inspection process is included in Appendix 2.

Evaluation, measurement and verification tasks are segregated within the Company to ensure they are performed and managed by personnel who are not directly responsible for program management.

Information on evaluation activities completed or in progress during 2015 is summarized in the chart below. Summary of the recommendations are provided in Appendix 6. The evaluation reports are available at www.pacificorp.com/es/dsm/washington.html

Program / Activities	Years Evaluated	Evaluator	Progress Status
Low Income Weatherization	2011-2012	Smith and Lehmann	Completed
FinAnswer Express	2012-2013	Navigant Consulting	Completed
Energy FinAnswer	2012-2013	Navigant Consulting	Completed
Refrigerator Recycling	2013 - 2014	Cadmus	Completed early 2016
Home Energy Savings	2013 - 2014	Cadmus	In progress

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Appendix 1

Energy Efficiency Cost Effectiveness

Pacific Power

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Portfolio and Sector Level Cost Effectiveness

Navigant estimated the cost-effectiveness for the overall energy efficiency portfolio and component sectors, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall energy efficiency portfolio and the two sector components. The program passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

Table 1 - Utility Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.67%
Commercial Line Loss	9.53%
Industrial Line Loss	8.16%
Irrigation Line Loss	9.67%
Residential Energy Rate ($/kWh)(base year 2015)	$0.0885
Commercial Energy Rate ($/kWh)(base year 2015)	$0.0820
Industrial Energy Rate ($/kWh)(base year 2015)	$0.0666
Irrigation Energy Rate ($/kWh)(base year 2015)	$0.0836
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 2 – Portfolio Level Costs 2015

Expense	Cost
School Energy Education	$61,431
Outreach and Communication	$208,268
Portfolio Level Expenditures	$406,057
Total Costs	**$675,756**

Table 3 – NEEA Inputs 2015

Sector	Savings at Meter (kWh)	NEEA Expenses ($)
Commercial	1,430,886	$413,005
Industrial	75,080	$21,671
Residential	1,557,439	$449,533
Total	**3,063,405**	**884,208**

Table 4 - Benefit/Cost Ratios by Portfolio Type

Measure Group	PTRC	TRC	UCT	RIM	PCT
Total Portfolio	1.48	1.34	2.28	0.58	2.82
Total Portfolio (Including NEEA)	1.46	1.32	2.17	0.57	2.95
Total Portfolio (Including NEBs)	1.74	1.60	2.28	0.58	3.19
Total Portfolio (Including NEEA & NEBs)	1.70	1.57	2.17	0.57	3.31
C&I Programs	1.61	1.47	2.42	0.61	2.93
C&I Programs (Including NEEA)	1.59	1.45	2.32	0.60	3.04
Residential Programs	1.43	1.30	2.52	0.57	2.66
Residential Programs (Including NEEA)	1.39	1.27	2.32	0.55	2.81
Residential Programs (Including NEBs)	2.13	2.00	2.52	0.57	3.56
Residential Programs (Including NEEA & NEBs)	2.05	1.93	2.32	0.55	3.71

*Portfolio and Residential results exclude the Low Income Program from the analysis.

Table 5 – 2015 Total Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0503	$16,271,951	$24,033,123	$7,761,172	1.48
Total Resource Cost Test (TRC) No Adder	$0.0503	$16,271,951	$21,848,294	$5,576,342	1.34
Utility Cost Test (UCT)	$0.0296	$9,577,193	$21,848,294	$12,271,101	2.28
Rate Impact Test (RIM)		$37,418,690	$21,848,294	-$15,570,397	0.58
Participant Cost Test (PCT)		$11,624,414	$32,818,140	$21,193,727	2.82
Lifecycle Revenue Impacts ($/kWh)					$0.0003521371

Table 6 – 2015 Total Portfolio Cost-Effectiveness Results (Including NEEA)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0506	$17,156,159	$24,970,140	$7,813,981	1.46
Total Resource Cost Test (TRC) No Adder	$0.0506	$17,156,159	$22,700,128	$5,543,968	1.32
Utility Cost Test (UCT)	$0.0309	$10,461,401	$22,700,128	$12,238,726	2.17
Rate Impact Test (RIM)		$39,721,799	$22,700,128	-$17,021,671	0.57
Participant Cost Test (PCT)		$11,624,414	$34,237,041	$22,612,627	2.95
Lifecycle Revenue Impacts ($/kWh)					$0.0003849588

Table 7 – 2015 Total Portfolio Cost-Effectiveness Results (Including NEBs)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0503	$16,271,951	$28,251,822	$11,979,871	1.74
Total Resource Cost Test (TRC) No Adder	$0.0503	$16,271,951	$26,066,993	$9,795,042	1.60
Utility Cost Test (UCT)	$0.0296	$9,577,193	$21,848,294	$12,271,101	2.28
Rate Impact Test (RIM)		$37,418,690	$21,848,294	-$15,570,397	0.58
Participant Cost Test (PCT)		$11,624,414	$37,036,840	$25,412,426	3.19
Lifecycle Revenue Impacts ($/kWh)					$0.0003521371

Table 8 – 2015 Total Portfolio Cost-Effectiveness Results (Including NEEA and NEBs)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0506	$17,156,159	$29,188,840	$12,032,680	1.70
Total Resource Cost Test (TRC) No Adder	$0.0506	$17,156,159	$26,918,827	$9,762,668	1.57
Utility Cost Test (UCT)	$0.0309	$10,461,401	$22,700,128	$12,238,726	2.17
Rate Impact Test (RIM)		$39,721,799	$22,700,128	-$17,021,671	0.57
Participant Cost Test (PCT)		$11,624,414	$38,455,740	$26,831,327	3.31
Lifecycle Revenue Impacts ($/kWh)					$0.0003849588

Table 9 – 2015 C&I Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0454	$9,591,614	$15,468,326	$5,876,712	1.61
Total Resource Cost Test (TRC) No Adder	$0.0454	$9,591,614	$14,062,115	$4,470,501	1.47
Utility Cost Test (UCT)	$0.0275	$5,813,131	$14,062,115	$8,248,984	2.42
Rate Impact Test (RIM)		$23,022,204	$14,062,115	-$8,960,089	0.61
Participant Cost Test (PCT)		$6,945,700	$20,376,290	$13,430,590	2.93
Lifecycle Revenue Impacts ($/kWh)					$0.0001714551

Table 10 – 2015 C&I Energy Efficiency Portfolio Cost-Effectiveness Results (Including NEEA)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0459	$10,062,817	$16,021,460	$5,958,643	1.59
Total Resource Cost Test (TRC) No Adder	$0.0459	$10,062,817	$14,564,964	$4,502,146	1.45
Utility Cost Test (UCT)	$0.0286	$6,284,335	$14,564,964	$8,280,629	2.32
Rate Impact Test (RIM)		$24,219,481	$14,564,964	-$9,654,517	0.60
Participant Cost Test (PCT)		$6,945,700	$21,102,364	$14,156,664	3.04
Lifecycle Revenue Impacts ($/kWh)					$0.0001847433

Table 11 – 2015 Residential Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0536	$6,004,582	$8,564,796	$2,560,215	1.43
Total Resource Cost Test (TRC) No Adder	$0.0536	$6,004,582	$7,786,179	$1,781,597	1.30
Utility Cost Test (UCT)	$0.0276	$3,088,306	$7,786,179	$4,697,872	2.52
Rate Impact Test (RIM)		$13,720,731	$7,786,179	-$5,934,553	0.57
Participant Cost Test (PCT)		$4,678,713	$12,441,850	$7,763,137	2.66
Lifecycle Revenue Impacts ($/kWh)					$0.0001845432

Table 12 – 2015 Residential Energy Efficiency Portfolio Cost-Effectiveness (Including NEEA)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0537	$6,417,587	$8,948,680	$2,531,094	1.39
Total Resource Cost Test (TRC) No Adder	$0.0537	$6,417,587	$8,135,164	$1,717,577	1.27
Utility Cost Test (UCT)	$0.0293	$3,501,311	$8,135,164	$4,633,853	2.32
Rate Impact Test (RIM)		$14,826,563	$8,135,164	-$6,691,399	0.55
Participant Cost Test (PCT)		$4,678,713	$13,134,677	$8,455,964	2.81
Lifecycle Revenue Impacts ($/kWh)					$0.0002080784

Table 13 – 2015 Residential Energy Efficiency Portfolio Cost-Effectiveness (Including NEBs)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0536	$6,004,582	$12,783,496	$6,778,914	2.13
Total Resource Cost Test (TRC) No Adder	$0.0536	$6,004,582	$12,004,878	$6,000,296	2.00
Utility Cost Test (UCT)	$0.0276	$3,088,306	$7,786,179	$4,697,872	2.52
Rate Impact Test (RIM)		$13,720,731	$7,786,179	-$5,934,553	0.57
Participant Cost Test (PCT)		$4,678,713	$16,660,550	$11,981,837	3.56
Lifecycle Revenue Impacts ($/kWh)					$0.0001845432

Table 14 – 2015 Residential Energy Efficiency Portfolio Cost-Effectiveness (Including NEEA and NEBs)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0537	$6,417,587	$13,167,380	$6,749,793	2.05
Total Resource Cost Test (TRC) No Adder	$0.0537	$6,417,587	$12,353,863	$5,936,277	1.93
Utility Cost Test (UCT)	$0.0293	$3,501,311	$8,135,164	$4,633,853	2.32
Rate Impact Test (RIM)		$14,826,563	$8,135,164	-$6,691,399	0.55
Participant Cost Test (PCT)		$4,678,713	$17,353,377	$12,674,663	3.71
Lifecycle Revenue Impacts ($/kWh)					$0.0002080784

The table below summarize the non-energy benefits for the Home Energy Savings program.

Table 15 – Home Energy Savings Non-Energy Benefits (2015)

Non-Energy Benefits	Non-Energy Benefits Water ($/yr)	Non-Energy Benefits Other ($/yr)	Measure Life	Quantity	Total Present Value Benefits
HES - Appliances	$67.74	$57.18	14	163	$64,623
HES - Energy Kits	$184.77	$23.20	9	6,783	$1,528,398
HES - Lighting	$0.00	$5.36	9	359,660	$2,625,679
Total HES NEBs	**$252.51**	**$85.74**	**9**	**366,606**	**$4,218,699**

Program Level Cost Effectiveness

Home Energy Savings Program

Navigant estimated the cost-effectiveness results for the Washington Home Energy Savings Program, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 6 measure categories.

Cost-effectiveness was tested using the 2015 IRP west residential heating 17%, west residential lighting 45%, west water heating 53% and west plug loads 61% load factor decrements. The program passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

Table 16 - Home Energy Savings Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.67%
Residential Energy Rate ($/kWh)(base year 2015)	$0.0885
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 17 – Home Energy Savings Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Dev.	Program Delivery	Incentives	Total Utility Costs	Gross Customer Costs
Appliance	$0	$89	$46	$4,437	$8,940	$13,512	$37,694
Building Shell	$0	$1,093	$565	$54,742	$83,046	$139,446	$235,402
Energy Kits	$0	$9,181	$4,750	$160,512	$100,128	$274,571	$110,718
HVAC	$0	$8,412	$4,352	$421,326	$670,739	$1,104,829	$1,202,813
Lighting	$0	$28,893	$14,949	$108,924	$864,830	$1,017,596	$3,039,747
Water Heating	$0	$241	$125	$12,068	$34,756	$47,190	$52,339
Total	**$0**	**$47,909**	**$24,788**	**$762,009**	**$1,762,438**	**$2,597,143**	**$4,678,713**

Table 18 – Home Energy Savings – Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Appliance	22,203	100%	22,203	100%	22,203	15
Building Shell	273,910	100%	273,910	100%	273,910	45
Energy Kits	2,300,906	100%	2,300,906	100%	2,300,906	9
HVAC	2,108,185	100%	2,108,185	100%	2,108,185	19
Lighting	7,241,052	100%	7,241,052	100%	7,241,052	9
Water Heating	60,384	100%	60,384	100%	60,384	15
Total	**12,006,640**	**100%**	**12,006,640**	**100%**	**12,006,640**	**12**

Table 19 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Appliance	0.37	0.34	1.06	0.40	0.83
Appliance (with NEBs)	1.90	1.87	1.06	0.40	2.54
Building Shell	1.72	1.56	3.27	0.73	2.40
Energy Kits	4.05	3.68	3.83	0.57	14.94
Energy Kits (with NEBs)	9.41	9.04	3.83	0.57	28.75
HVAC	1.52	1.39	2.05	0.63	2.61
Lighting	1.18	1.07	3.36	0.57	1.91
Lighting (with NEBs)	2.00	1.89	3.36	0.57	2.77
Water Heating	0.75	0.68	0.93	0.41	1.82
Total	**1.45**	**1.31**	**2.79**	**0.60**	**2.41**
Total (with NEBs)	**2.21**	**2.08**	**2.79**	**0.60**	**3.31**

Table 20 – Home Energy Savings Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0550	$5,513,419	$7,970,991	$2,457,572	1.45
Total Resource Cost Test (TRC) No Adder	$0.0550	$5,513,419	$7,246,356	$1,732,937	1.31
Utility Cost Test (UCT)	$0.0259	$2,597,143	$7,246,356	$4,649,212	2.79
Rate Impact Test (RIM)		$12,117,491	$7,246,356	-$4,871,136	0.60
Participant Cost Test (PCT)		$4,678,713	$11,282,786	$6,604,073	2.41
Lifecycle Revenue Impacts ($/kWh)					$0.0001009844
Discounted Participant Payback (years)					1.53

Table 6 through Table 18 provides cost-effectiveness results for all 6 measures.

Table 21 - Home Energy Savings Appliance Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape – Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.1804	$42,266	$15,764	-$26,502	0.37
Total Resource Cost Test (TRC) No Adder	$0.1804	$42,266	$14,330	-$27,935	0.34
Utility Cost Test (UCT)	$0.0577	$13,512	$14,330	$819	1.06
Rate Impact Test (RIM)		$35,757	$14,330	-$21,427	0.40
Participant Cost Test (PCT)		$37,694	$31,186	-$6,508	0.83
Lifecycle Revenue Impacts ($/kWh)					$0.0000003552
Discounted Participant Payback (years)					n/a

Table 22 - Home Energy Savings Building Shell Cost-Effectiveness Results (Decrement - West Residential Heating - 17%, Load Shape – Heating)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0578	$291,802	$501,065	$209,263	1.72
Total Resource Cost Test (TRC) No Adder	$0.0578	$291,802	$455,513	$163,712	1.56
Utility Cost Test (UCT)	$0.0276	$139,446	$455,513	$316,068	3.27
Rate Impact Test (RIM)		$622,009	$455,513	-$166,496	0.73
Participant Cost Test (PCT)		$235,402	$565,609	$330,208	2.40
Lifecycle Revenue Impacts ($/kWh)					$0.0000009158
Discounted Participant Payback (years)					n/a

Table 23 - Home Energy Savings Energy Kits Cost-Effectiveness Results (Decrement - West Water Heating - 53%, Load Shape – Residential Water Heating)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0174	$285,161	$1,155,414	$870,253	4.05
Total Resource Cost Test (TRC) No Adder	$0.0174	$285,161	$1,050,377	$765,216	3.68
Utility Cost Test (UCT)	$0.0167	$274,571	$1,050,377	$775,806	3.83
Rate Impact Test (RIM)		$1,828,664	$1,050,377	-$778,287	0.57
Participant Cost Test (PCT)		$110,718	$1,654,221	$1,543,503	14.94
Lifecycle Revenue Impacts ($/kWh)					$0.0000215161
Discounted Participant Payback (years)					0.05

*Energy kits with lighting measures utilize the lighting decrement and load shape.

Table 24 - Home Energy Savings HVAC Cost-Effectiveness Results
(Decrement - West Residential Heating - 17%, Load Shape – Heating)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0630	$1,636,904	$2,494,841	$857,937	1.52
Total Resource Cost Test (TRC) No Adder	$0.0630	$1,636,904	$2,268,037	$631,133	1.39
Utility Cost Test (UCT)	$0.0425	$1,104,829	$2,268,037	$1,163,208	2.05
Rate Impact Test (RIM)		$3,575,568	$2,268,037	-$1,307,532	0.63
Participant Cost Test (PCT)		$1,202,813	$3,141,478	$1,938,664	2.61
Lifecycle Revenue Impacts ($/kWh)					$0.0000170920
Discounted Participant Payback (years)					2.93

Table 25 - Home Energy Savings Lighting Cost-Effectiveness Results
(Decrement - West Residential Lighting - 48%, Load Shape – Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0614	$3,192,514	$3,755,645	$563,132	1.18
Total Resource Cost Test (TRC) No Adder	$0.0614	$3,192,514	$3,414,223	$221,709	1.07
Utility Cost Test (UCT)	$0.0196	$1,017,596	$3,414,223	$2,396,626	3.36
Rate Impact Test (RIM)		$5,947,803	$3,414,223	-$2,533,580	0.57
Participant Cost Test (PCT)		$3,039,747	$5,795,036	$2,755,289	1.91
Lifecycle Revenue Impacts ($/kWh)					$0.0000700418
Discounted Participant Payback (years)					3.53

Table 26 - Home Energy Savings Water Heating Cost-Effectiveness Results
(Decrement - West Water Heating - 53%, Load Shape – Residential Water Heating)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.1017	$64,773	$48,263	-$16,510	0.75
Total Resource Cost Test (TRC) No Adder	$0.1017	$64,773	$43,875	-$20,897	0.68
Utility Cost Test (UCT)	$0.0741	$47,190	$43,875	-$3,314	0.93
Rate Impact Test (RIM)		$107,690	$43,875	-$63,814	0.41
Participant Cost Test (PCT)		$52,339	$95,256	$42,917	1.82
Lifecycle Revenue Impacts ($/kWh)					$0.0000010578
Discounted Participant Payback (years)					3.42

In addition to the energy benefits reported above, appliances, energy savings kits and lighting in the Home Energy Savings program offer significant non-energy benefits (NEBs). Table 12 through

Table **30** detail the non-energy benefits and the cost-effectiveness results.

Table 27 - Home Energy Savings Appliance Non-Energy Benefits

Measure Name	Quantity	Non-Energy Benefits Water ($/yr)	Non-Energy Benefits Other ($/yr)	Measure Life	Total NEB ($/yr)	Total Present Value Benefits
Clothes Washers 3.2 MEF - Electric DHW & Electric Dryer	117	$22.58	$19.06	14	$41.64	$46,385.76
Clothes Washers 3.2 MEF - Gas DHW & Electric Dryer	39	$22.58	$19.06	14	$41.64	$15,461.92
Clothes Washers 3.2 MEF - Gas DHW & Gas Dryer	7	$22.58	$19.06	14	$41.64	$2,775.22

Table 28 - Home Energy Savings Energy Kits Non-Energy Benefits

Measure Name	Quantity	Non-Energy Benefits Water ($/yr)	Non-Energy Benefits Other ($/yr)	Measure Life	Total NEB ($/yr)	Total Present Value Benefits
Energy Savings Kit - Basic - 1 Bathroom	2,024	$20.53	$3.08	9	$23.61	$334,162.30
Energy Savings Kit - Basic - 2 Bathrooms	3,083	$41.06	$3.08	9	$44.14	$990,555.04
Energy Savings Kit - Best - 1 Bathroom	119	$20.53	$2.60	11	$23.13	$21,681.60
Energy Savings Kit - Best - 2 Bathrooms	403	$41.06	$2.60	11	$43.66	$138,598.20
Energy Savings Kit - Better - 1 Bathroom	21	$20.53	$3.08	9	$23.61	$3,467.10
Energy Savings Kit - Better - 2 Bathrooms	77	$41.06	$3.08	9	$44.14	$24,739.78
Energy Savings Kit - CFL	961	$0.00	$3.08	5	$3.08	$13,063.06
Energy Savings Kit - LED - WA	95	$0.00	$2.60	12	$2.60	$2,130.95

Table 29 - Home Energy Savings Lighting Non-Energy Benefits

Measure Name	Quantity	Non-Energy Benefits Water ($/yr)	Non-Energy Benefits Other ($/yr)	Measure Life	Total NEB ($/yr)	Total Present Value Benefits
CFLs - General Purpose - Retail	187,393	$0.00	$0.77	6	$0.77	$741,345.99
CFLs - Specialty - Retail	37,093	$0.00	$1.18	7	$1.18	$254,607.91
LEDs - General Purpose (Omnidirectional) - Retail	87,288	$0.00	$0.65	12	$0.65	$489,490.52
LEDs - Specialty (Decorative and Directional) - Retail	47,886	$0.00	$2.76	12	$2.76	$1,140,234.11

The following tables provide the cost-effectiveness results after adding in the non-energy benefits detailed above beginning with the overall program results.

Table 30 - Home Energy Savings Program (with NEBs) Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0550	$5,513,419	$12,189,691	$6,676,272	2.21
Total Resource Cost Test (TRC) No Adder	$0.0550	$5,513,419	$11,465,055	$5,951,636	2.08
Utility Cost Test (UCT)	$0.0259	$2,597,143	$7,246,356	$4,649,212	2.79
Rate Impact Test (RIM)		$12,117,491	$7,246,356	-$4,871,136	0.60
Participant Cost Test (PCT)		$4,678,713	$15,501,485	$10,822,772	3.31
Lifecycle Revenue Impacts ($/kWh)					$0.0001009844
Discounted Participant Payback (years)					3.62

Table 31 - Home Energy Savings Appliance (with NEBs) Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape – Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.1804	$42,266	$80,386	$38,121	1.90
Total Resource Cost Test (TRC) No Adder	$0.1804	$42,266	$78,953	$36,688	1.87
Utility Cost Test (UCT)	$0.0577	$13,512	$14,330	$819	1.06
Rate Impact Test (RIM)		$35,757	$14,330	-$21,427	0.40
Participant Cost Test (PCT)		$37,694	$95,808	$58,114	2.54
Lifecycle Revenue Impacts ($/kWh)					$0.0000003552
Discounted Participant Payback (years)					n/a

Table 32 - Home Energy Savings Energy Kits (with NEBs) Cost-Effectiveness Results (Decrement - West Water Heating -53%, Load Shape – Residential Water Heating)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0174	$285,161	$2,683,812	$2,398,651	9.41
Total Resource Cost Test (TRC) No Adder	$0.0174	$285,161	$2,578,775	$2,293,614	9.04
Utility Cost Test (UCT)	$0.0167	$274,571	$1,050,377	$775,806	3.83
Rate Impact Test (RIM)		$1,828,664	$1,050,377	-$778,287	0.57
Participant Cost Test (PCT)		$110,718	$3,182,619	$3,071,901	28.75
Lifecycle Revenue Impacts ($/kWh)					$0.0000215161
Discounted Participant Payback (years)					0.05

*Energy kits with lighting measures utilize the lighting decrement and load shape.

Table 33 - Home Energy Savings Lighting (with NEBs) Cost-Effectiveness Results (Decrement - West Residential Lighting - 48%, Load Shape – Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0614	$3,192,514	$6,381,324	$3,188,810	2.00
Total Resource Cost Test (TRC) No Adder	$0.0614	$3,192,514	$6,039,901	$2,847,388	1.89
Utility Cost Test (UCT)	$0.0196	$1,017,596	$3,414,223	$2,396,626	3.36
Rate Impact Test (RIM)		$5,947,803	$3,414,223	-$2,533,580	0.57
Participant Cost Test (PCT)		$3,039,747	$8,420,715	$5,380,968	2.77
Lifecycle Revenue Impacts ($/kWh)					$0.0000700418
Discounted Participant Payback (years)					3.53

Home Energy Reporting

Navigant estimated the cost-effectiveness results for the Washington Home Energy Reporting Program, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for Legacy/Refill and Expansion options.

Cost-effectiveness was tested using the 2015 IRP west residential whole house 64% load factor decrement. The program does not pass any of the cost-effectiveness tests.

Table 34 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.67%
Residential Energy Rate ($/kWh)(base year 2015)	$0.0885
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 35 – Home Energy Reporting Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
HER Legacy & Refill	$0	$6,806	$132,000	$3,608	$0	$142,414	$0
HER Expansion	$0	$20,419	$164,931	$12,802	$0	$298,152	$0
Total	**$0**	**$27,226**	**$296,931**	**$16,410**	**$0**	**$340,566**	**$0**

Table 36 – Home Energy Reporting Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
HER Legacy & Refill	4,456,333	100%	4,456,333	100%	4,456,333	1
HER Expansion	3,263,809	100%	3,263,809	100%	3,263,809	1
Total	**7,720,142**	**100%**	**7,720,142**	**100%**	**7,720,142**	**1**

Table 37 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
HER Legacy & Refill	1.30	1.18	1.18	0.31	n/a
HER Expansion	0.69	0.62	0.62	0.25	n/a
Total	**0.94**	**0.86**	**0.86**	**0.28**	n/a

Table 38 – Home Energy Reporting Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0462	$340,566	$321,187	-$19,379	0.94
Total Resource Cost Test (TRC) No Adder	$0.0462	$340,566	$291,989	-$48,578	0.86
Utility Cost Test (UCT)	$0.0462	$340,566	$291,989	-$48,578	0.86
Rate Impact Test (RIM)		$1,036,780	$291,989	-$744,792	0.28
Participant Cost Test (PCT)		$0	$696,214	$696,214	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0001854547
Discounted Participant Payback (years)					n/a

Table 39 - Home Energy Reporting Legacy and Refill Cost-Effectiveness Results (Decrement - West Residential Whole House - 49%, Load Shape – Whole House)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0335	$142,414	$185,401	$42,987	1.30
Total Resource Cost Test (TRC) No Adder	$0.0335	$142,414	$168,546	$26,132	1.18
Utility Cost Test (UCT)	$0.0335	$142,414	$168,546	$26,132	1.18
Rate Impact Test (RIM)		$544,293	$168,546	-$375,747	0.31
Participant Cost Test (PCT)		$0	$401,879	$401,879	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000935618
Discounted Participant Payback (years)					n/a

Table 40 - Home Energy Reporting Expansion Cost-Effectiveness Results (Decrement - West Residential Whole House - 49%, Load Shape – Whole House)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0636	$198,152	$135,787	-$62,365	0.69
Total Resource Cost Test (TRC) No Adder	$0.0636	$198,152	$123,443	-$74,710	0.62
Utility Cost Test (UCT)	$0.0636	$198,152	$123,443	-$74,710	0.62
Rate Impact Test (RIM)		$492,487	$123,443	-$369,045	0.25
Participant Cost Test (PCT)		$0	$294,335	$294,335	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000918929
Discounted Participant Payback (years)					n/a

See ya later, refrigerator®

Navigant estimated the cost-effectiveness results for the Washington See Ya Later Refrigerator (SYLR) Program, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 3 measure categories.

Cost-effectiveness was tested using the 2015 IRP west plug loads 61% and west residential lighting 45% load factor decrements. The program passes the cost-effectiveness for all the tests except the RIM and PCT tests. The memo consists of the following tables.

Table 41 - SYLR Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.67%
Residential Energy Rate ($/kWh)(base year 2015)	$0.0885
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 42 – SYLR Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Admin	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
Refrigerators	$0	$9,472	$70,064	$3,215	$32,400	$115,151	$0
Freezers	$0	$1,891	$13,991	$642	$7,620	$24,144	$0
Kits	$0	$496	$3,669	$168	$6,968	$11,301	$0
Total	**$0**	**$11,859**	**$87,724**	**$4,026**	**$46,988**	**$150,597**	**$0**

Table 43 – SYLR Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Refrigerators	629,640	100%	629,640	100%	629,640	7
Freezers	125,730	100%	125,730	100%	125,730	5
Kits	32,973	100%	32,973	100%	32,973	6
Total	**788,343**	**100%**	**788,343**	**100%**	**788,343**	**7**

Table 44 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Refrigerators	1.98	1.80	1.80	0.45	n/a
Freezers	1.37	1.24	1.24	0.39	n/a
Kits	1.04	0.94	0.94	0.39	n/a
Total	**1.81**	**1.65**	**1.65**	**0.44**	**n/a**

Table 45 – SYLR Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0343	$150,597	$272,618	$122,021	1.81
Total Resource Cost Test (TRC) No Adder	$0.0343	$150,597	$247,834	$97,238	1.65
Utility Cost Test (UCT)	$0.0343	$150,597	$247,834	$97,238	1.65
Rate Impact Test (RIM)		$566,460	$247,834	-$318,625	0.44
Participant Cost Test (PCT)		$0	$462,851	$462,851	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000113213
Discounted Participant Payback (years)					n/a

Table 6 through Table 8 provides cost-effectiveness results for all 6 measures.

Table 46 - SYLR Refrigerators Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape – Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0313	$115,151	$227,937	$112,786	1.98
Total Resource Cost Test (TRC) No Adder	$0.0313	$115,151	$207,216	$92,064	1.80
Utility Cost Test (UCT)	$0.0313	$115,151	$207,216	$92,064	1.80
Rate Impact Test (RIM)		$463,196	$207,216	-$255,980	0.45
Participant Cost Test (PCT)		$0	$380,444	$380,444	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000090954
Discounted Participant Payback (years)					n/a

Table 47 - SYLR Freezers Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape – Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0441	$24,144	$32,963	$8,818	1.37
Total Resource Cost Test (TRC) No Adder	$0.0441	$24,144	$29,966	$5,822	1.24
Utility Cost Test (UCT)	$0.0441	$24,144	$29,966	$5,822	1.24
Rate Impact Test (RIM)		$75,998	$29,966	-$46,032	0.39
Participant Cost Test (PCT)		$0	$59,473	$59,473	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000022902
Discounted Participant Payback (years)					n/a

Table 48 - SYLR Kits Cost-Effectiveness Results
(Decrement - West Residential Lighting - 45%, Load Shape – Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0670	$11,301	$11,718	$417	1.04
Total Resource Cost Test (TRC) No Adder	$0.0670	$11,301	$10,653	-$648	0.94
Utility Cost Test (UCT)	$0.0670	$11,301	$10,653	-$648	0.94
Rate Impact Test (RIM)		$27,266	$10,653	-$16,614	0.39
Participant Cost Test (PCT)		$0	$22,933	$22,933	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000006886
Discounted Participant Payback (years)					n/a

Low-Income Weatherization

Navigant estimated the cost-effectiveness results for the Washington Low Income Weatherization Program, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2015 IRP west residential whole house 64% load factor decrement. The program does not pass any of the cost-effectiveness tests.

Table 49 - Home Energy Savings Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.67%
Residential Energy Rate ($/kWh)(base year 2015)	$0.0885
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 50 - Low Income Weatherization Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
Low Income	$0	$31,002	$103,543	$3,483	$720,043	$858,071	$0
Total	**$0**	**$31,002**	**$103,543**	**$3,483**	**$720,043**	**$858,071**	**$0**

Table 51 - Low Income Weatherization Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Low Income	144,648	100%	144,648	100%	144,648	37
Total	**144,648**	**100%**	**144,648**	**100%**	**144,648**	**37**

Table 52 - Low Income Weatherization Program Level Cost-Effectiveness Results (Decrement - West Residential Whole House - 49%, Load Shape – Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.3439	$858,071	$231,291	-$626,780	0.27
Total Resource Cost Test (TRC) No Adder	$0.3439	$858,071	$210,264	-$647,807	0.25
Utility Cost Test (UCT)	$0.3439	$858,071	$210,264	-$647,807	0.25
Rate Impact Test (RIM)		$1,096,391	$210,264	-$886,127	0.19
Participant Cost Test (PCT)		$0	$958,363	$958,363	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000059313
Discounted Participant Payback (years)					n/a

In addition to the energy benefits reported above, the Low Income program offers significant non-energy benefits (NEBs). Table 53 details the non-energy benefits and Table 54 provides the cost-effectiveness results.

Table 53 - Low Income Weatherization Non-Energy Benefits

Non-Energy Benefit	Program Impact	Perspective Adjusted
External Payment Reduction	$25,725	PTRC, TRC, UCT, RIM
Home Repair Costs	$29,753	PTRC, TRC, PCT
Economic Impact	$303,506	PTRC, TRC
Total	**$358,984**	-

Table 54 - Low Income Weatherization Program (with NEBs) Level Cost-Effectiveness Results (Decrement - West Residential Whole House - 49%, Load Shape – Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.3439	$858,071	$590,274	-$267,797	0.69
Total Resource Cost Test (TRC) No Adder	$0.3439	$858,071	$569,248	-$288,823	0.66
Utility Cost Test (UCT)	$0.3439	$858,071	$235,989	-$622,082	0.28
Rate Impact Test (RIM)		$1,096,391	$235,989	-$860,402	0.22
Participant Cost Test (PCT)		$0	$988,115	$988,115	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000057591
Discounted Participant Payback (years)					n/a

***watt*smart Business**

Navigant estimated the cost-effectiveness results for the Washington Wattsmart Business Program, based on 2015 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 10 measure categories.

Cost-effectiveness was tested using the 2015 IRP west industrial 44%, west plug loads 61%, and west commercial cooling 13% load factor decrement. The program passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

Table 55 - Utility Inputs

Parameter	Value
Discount Rate	6.66%
Commercial Line Loss	9.53%
Industrial Line Loss	8.16%
Irrigation Line Loss	9.67%
Commercial Energy Rate ($/kWh)(base year 2015)	$0.0820
Industrial Energy Rate ($/kWh)(base year 2015)	$0.0666
Irrigation Energy Rate ($/kWh)(base year 2015)	$0.0836
Inflation Rate[1]	1.9%

[1] Future rates determined using a 1.9% annual escalator.

Table 56 – Annual Wattsmart Business Program Costs by Measure Category

Measure Group	Engineering Costs	Utility Admin	Program Admin	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
Building Shell	$528	$321	$1,073	$125	$12,530	$14,578	$40,167
Compressed Air	$44,760	$27,238	$90,953	$10,634	$185,919	$359,503	$331,000
Electronics	$6,739	$4,101	$13,694	$1,601	$15,176	$41,311	$26,016
Energy Management	$34,424	$20,948	$69,951	$8,178	$24,014	$157,515	$9,556
Food Service Equip.	$7,452	$4,535	$15,142	$1,770	$16,562	$45,461	$38,613
HVAC	$10,934	$6,654	$22,218	$2,598	$43,530	$85,933	$139,481
Irrigation	$33,402	$20,326	$67,874	$7,935	$91,416	$220,954	$275,981
Lighting	$343,898	$209,276	$698,815	$81,700	$1,971,335	$3,305,023	$4,426,318
Motors	$12,217	$7,435	$24,826	$2,902	$56,956	$104,337	$70,011
Refrigeration	$187,908	$114,350	$381,837	$44,641	$749,780	$1,478,516	$1,588,558
Total	**$682,261**	**$415,185**	**$1,386,383**	**$162,085**	**$3,167,218**	**$5,813,131**	**$6,945,700**

Table 57 – Annual Wattsmart Business Program Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Building Shell	18,041	97%	17,500	100%	17,500	16
Compressed Air	1,529,031	97%	1,483,160	100%	1,483,160	15
Electronics	223,304	100%	223,304	100%	223,304	5
Energy Management	1,200,710	95%	1,140,675	100%	1,140,675	3
Food Service Equipment	254,555	97%	246,918	100%	246,918	9
HVAC	503,203	72%	362,306	100%	362,306	15
Irrigation	1,141,041	97%	1,106,810	100%	1,106,810	8
Lighting	11,747,894	97%	11,395,457	100%	11,395,457	14
Motors	417,360	97%	404,839	100%	404,839	15
Refrigeration	6,623,987	94%	6,226,548	100%	6,226,548	14
Total	**23,659,126**	**96%**	**22,607,517**	**100%**	**22,607,517**	**13**

Table 58 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Building Shell	0.35	0.32	0.92	0.43	0.72
Compressed Air	2.23	2.03	2.85	0.68	4.04
Electronics	1.13	1.03	1.30	0.42	3.86
Energy Management	1.38	1.25	1.14	0.47	25.75
Food Service Equipment	1.68	1.53	2.27	0.51	4.46
HVAC	1.60	1.46	3.09	0.63	2.72
Irrigation	2.66	2.42	4.45	1.04	2.94
Lighting	1.31	1.19	2.07	0.54	2.57
Motors	1.90	1.73	1.95	0.59	4.27
Refrigeration	2.09	1.90	2.98	0.69	3.55
Total	**1.61**	**1.47**	**2.42**	**0.61**	**2.93**

Table 59 – Wattsmart Business Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0454	$9,591,614	$15,468,326	$5,876,712	1.61
Total Resource Cost Test (TRC) No Adder	$0.0454	$9,591,614	$14,062,115	$4,470,501	1.47
Utility Cost Test (UCT)	$0.0275	$5,813,131	$14,062,115	$8,248,984	2.42
Rate Impact Test (RIM)		$23,022,204	$14,062,115	-$8,960,089	0.61
Participant Cost Test (PCT)		$6,945,700	$20,376,290	$13,430,590	2.93
Lifecycle Revenue Impacts ($/kWh)					$0.0001714551

Table 6 through Table 15 provide cost-effectiveness results for all 10 measures.

Table 60 - Wattsmart Business Building Shell Cost-Effectiveness Results (Decrement - West Industrial - 44%, Load Shape – HVAC)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.2198	$42,215	$14,728	-$27,487	0.35
Total Resource Cost Test (TRC) No Adder	$0.2198	$42,215	$13,389	-$28,826	0.32
Utility Cost Test (UCT)	$0.0759	$14,578	$13,389	-$1,189	0.92
Rate Impact Test (RIM)		$31,163	$13,389	-$17,773	0.43
Participant Cost Test (PCT)		$40,167	$29,115	-$11,052	0.72
Lifecycle Revenue Impacts ($/kWh)					$0.0000002761
Discounted Participant Payback (years)					n/a

Table 61 - Wattsmart Business Compressed Air Cost-Effectiveness Results (Decrement - West Industrial - 44%, Load Shape – Machinery General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0322	$504,585	$1,127,531	$622,946	2.23
Total Resource Cost Test (TRC) No Adder	$0.0322	$504,585	$1,025,028	$520,443	2.03
Utility Cost Test (UCT)	$0.0230	$359,503	$1,025,028	$665,525	2.85
Rate Impact Test (RIM)		$1,509,699	$1,025,028	-$484,671	0.68
Participant Cost Test (PCT)		$331,000	$1,336,115	$1,005,114	4.04
Lifecycle Revenue Impacts ($/kWh)					$0.0000080340
Discounted Participant Payback (years)					1.42

Table 62 - Wattsmart Business Electronics Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape - Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0536	$52,151	$58,991	$6,840	1.13
Total Resource Cost Test (TRC) No Adder	$0.0536	$52,151	$53,628	$1,477	1.03
Utility Cost Test (UCT)	$0.0424	$41,311	$53,628	$12,317	1.30
Rate Impact Test (RIM)		$126,641	$53,628	-$73,014	0.42
Participant Cost Test (PCT)		$26,016	$100,507	$74,491	3.86
Lifecycle Revenue Impacts ($/kWh)					$0.0000036325
Discounted Participant Payback (years)					0.58

Table 63 - Wattsmart Business Energy Management Cost-Effectiveness Results (Decrement - West Industrial - 44%, Load Shape – Machinery General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0458	$143,057	$197,040	$53,983	1.38
Total Resource Cost Test (TRC) No Adder	$0.0458	$143,057	$179,127	$36,070	1.25
Utility Cost Test (UCT)	$0.0505	$157,515	$179,127	$21,612	1.14
Rate Impact Test (RIM)		$379,542	$179,127	-$200,415	0.47
Participant Cost Test (PCT)		$9,556	$246,041	$236,485	25.75
Lifecycle Revenue Impacts ($/kWh)					$0.0000166166
Discounted Participant Payback (years)					n/a

Table 64 - Wattsmart Business Food Service Equipment Cost-Effectiveness Results (Decrement - West Plug Loads - 61%, Load Shape - Plug Loads)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0381	$67,511	$113,733	$46,222	1.68
Total Resource Cost Test (TRC) No Adder	$0.0381	$67,511	$103,394	$35,883	1.53
Utility Cost Test (UCT)	$0.0256	$45,461	$103,394	$57,933	2.27
Rate Impact Test (RIM)		$201,232	$103,394	-$97,838	0.51
Participant Cost Test (PCT)		$38,613	$172,333	$133,721	4.46
Lifecycle Revenue Impacts ($/kWh)					$0.0000027048
Discounted Participant Payback (years)					1.07

Table 65 - Wattsmart Business HVAC Cost-Effectiveness Results (Decrement - West Industrial - 44%, Load Shape - HVAC)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0476	$181,884	$291,820	$109,936	1.60
Total Resource Cost Test (TRC) No Adder	$0.0476	$181,884	$265,291	$83,407	1.46
Utility Cost Test (UCT)	$0.0225	$85,933	$265,291	$179,358	3.09
Rate Impact Test (RIM)		$422,273	$265,291	-$156,982	0.63
Participant Cost Test (PCT)		$139,481	$379,870	$240,390	2.72
Lifecycle Revenue Impacts ($/kWh)					$0.0000026022
Discounted Participant Payback (years)					3.35

Table 66 - Wattsmart Business Irrigation Cost-Effectiveness Results (Decrement - West Commercial Cooling - 13%, Load Shape – Irrigation)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0503	$405,519	$1,080,679	$675,160	2.66
Total Resource Cost Test (TRC) No Adder	$0.0503	$405,519	$982,435	$576,916	2.42
Utility Cost Test (UCT)	$0.0274	$220,954	$982,435	$761,481	4.45
Rate Impact Test (RIM)		$941,885	$982,435	$40,550	1.04
Participant Cost Test (PCT)		$275,981	$812,348	$536,367	2.94
Lifecycle Revenue Impacts ($/kWh)					-$0.0000012609
Discounted Participant Payback (years)					2.00

Table 67 - Wattsmart Business Lighting Cost-Effectiveness Results (Decrement - West Commercial Lighting - 46%, Load Shape - Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0530	$5,760,007	$7,521,850	$1,761,843	1.31
Total Resource Cost Test (TRC) No Adder	$0.0530	$5,760,007	$6,838,045	$1,078,039	1.19
Utility Cost Test (UCT)	$0.0304	$3,305,023	$6,838,045	$3,533,022	2.07
Rate Impact Test (RIM)		$12,695,829	$6,838,045	-$5,857,784	0.54
Participant Cost Test (PCT)		$4,426,318	$11,362,140	$6,935,823	2.57
Lifecycle Revenue Impacts ($/kWh)					$0.0001040517
Discounted Participant Payback (years)					2.73

Table 68 - Wattsmart Business Motors Cost-Effectiveness Results
(Decrement - West Industrial - 44%, Load Shape – Machinery General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0366	$117,392	$223,402	$106,010	1.90
Total Resource Cost Test (TRC) No Adder	$0.0366	$117,392	$203,093	$85,700	1.73
Utility Cost Test (UCT)	$0.0325	$104,337	$203,093	$98,756	1.95
Rate Impact Test (RIM)		$346,411	$203,093	-$143,319	0.59
Participant Cost Test (PCT)		$70,011	$299,030	$229,019	4.27
Lifecycle Revenue Impacts ($/kWh)					$0.0000023757
Discounted Participant Payback (years)					0.46

Table 69 - Wattsmart Business Refrigeration Cost-Effectiveness Results
(Decrement – West Industrial - 44%, Load Shape - Refrigeration)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conversation Adder	$0.0353	$2,317,294	$4,838,553	$2,521,259	2.09
Total Resource Cost Test (TRC) No Adder	$0.0353	$2,317,294	$4,398,685	$2,081,391	1.90
Utility Cost Test (UCT)	$0.0225	$1,478,516	$4,398,685	$2,920,169	2.98
Rate Impact Test (RIM)		$6,367,527	$4,398,685	-$1,968,842	0.69
Participant Cost Test (PCT)		$1,588,558	$5,638,791	$4,050,233	3.55
Lifecycle Revenue Impacts ($/kWh)					$0.0000349725
Discounted Participant Payback (years)					1.95

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Appendix 2
Washington Measure Installation Verifications

Pacific Power

Washington Measure Installation Verifications

Home Energy Savings

Site inspections by Program Administrator staff for the following retrofit and/or new homes measures. Inspections are performed on >=5 percent of single family homes, >=5 percent of manufactured homes, 100 percent of multifamily projects, and 100 percent of new homes projects.

- Air sealing
- Central air conditioning best practices installation and sizing
- Duct sealing
- Duct sealing and insulation
- Heat pump performance tested comfort systems, commissioning, controls, and sizing
- Heat pump water heaters
- Insulation
- Windows

No site inspections are conducted for the following measures. However, all post-purchase incented measures undergo a quality assurance review prior to the issuance of the customer/dealer incentive and recording of savings (e.g. proof of purchase receipt review) and eligible equipment review. Additionally, customer account and customer address are checked to ensure the Company does not double pay for the same measure or double count measure savings.

- Central air conditioners
- Clothes washers
- Electric water heaters
- Evaporative coolers
- Freezers
- Light fixtures (post-purchase)
- Heat pumps
- Refrigerators

No site inspections are conducted for the following measures, which are delivered via an upstream, manufacturer buy-down model. Promotion agreement contracts are signed with manufacturers and retailers to set incentive levels, final product prices, and limits to the total number of units that can be purchased per customer. Program Administrator verifies measures for product eligibility and correct pricing. Pricing is also verified by Program Administrator field visits to retail locations.

- CFL bulbs
- LED bulbs
- Light fixtures (upstream)
- Room air conditioners

Customer eligibility for wattsmart Starter Kits is verified using the customer's account number and last name and cross-verifying with the current PacifiCorp customer database.

Refrigerator Recycling

The Company hires an independent inspector to phone survey >=5 percent program participants and to site inspect >= 5 percent of program participants in order to verifying program participation, eligibility of equipment, that vendor pick-up procedures are followed (equipment is disabled at site, kits distributed, etc.) and to survey customer experience.

Low Income Weatherization

All projects

- All measures are qualified through US Department of Energy approved audit tool or priority list.
- 100 percent inspection by agency inspector of all homes treated, reconciling work completed and quality (corrective action includes measure verification) prior to invoicing Company.
- State inspector follows with random inspections.

The Company hires independent inspector to inspect between 5-10 percent of homes treated (post treatment and payment).

wattsmart Business

<u>For projects delivered by third part program administrator</u>

Lighting projects

- Retrofits - 100 percent pre- and post-installation site inspections by third party consultant of all projects with incentives over a specified dollar amount. Project cost documentation reviewed for all projects.
- New construction - 100 percent post-installation site inspections by third party consultant of all projects with incentives over a specified dollar amount.
- A percent of post-installation site inspections by program administrator of projects with incentives under a specified dollar amount.

Non-lighting projects (typical upgrades/listed measures, custom measures)

- 100 percent of applications with an incentive that exceeds a specified dollar amount will be inspected (via site inspection) by program administrator.
- A minimum of a specified percent of remaining non-lighting applications will be inspected, either in person or via telephone interview, by program administrator.

<u>For Company in-house project manager delivered projects</u>

Lighting and non-lighting

- 100 percent pre/post-installation site inspections by third party consulting engineering firms, invoice reconciled to inspection results.
- No pre-inspection for new construction

All Programs

As part of the third-party program evaluations (two-year cycle) process, the Company is implementing semi-annual customer surveys to collect evaluation-relevant data more frequently to cure for memory loss and other detractors such as customers moving and data not be readily available at evaluation time). This will serve as a further check verifying customer participation and measures installed.

Additional record reviews and site inspections (including metering/data logging) is conducted as part of the process and impact evaluations, a final verification of measure installations.

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Appendix 3
Home Energy Savings Retailers

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The Company worked with 17 retailers in 2015 to promote efficient upstream technologies such as CFLs, LEDs, efficient lighting fixtures, and RACs (room air conditioner). Table 1 lists the upstream retailers and redemptions.

Table 1[1]
Participating Upstream Retailers and Redemptions

Retailer	City	CFLs	LEDs	Fixtures	RACs
Ace Hardware - Stein's #7047	Yakima		√	√	
Ace Hardware #14426	Naches		√		
Ace Hardware #14965	Walla Walla		√	√	
Big Lots #4558	Yakima	√	√		
Corner Grocery & Hardware	Yakima		√	√	
Costco #1013	Union Gap	√	√	√	√
Habitat for Humanity ReStore #2	Yakima	√			
Home Depot #4727	Yakima	√	√	√	
Hometown Ace Hardware #11909	Yakima		√	√	
Lowe's #3240	Yakima	√	√		
Roy's Ace Hardware #10640	Yakima		√	√	
True Value Hardware - C&H	Yakima		√		
True Value Hardware - Country Farm and Garden	Yakima		√		
True Value Hardware - L&G Ranch Supply	Walla Walla		√	√	
True Value Hardware #5353	Selah	√	√	√	
Wal-Mart - Supercenter #5078	Yakima	√	√	√	
Wal-Mart #2269	Yakima	√	√	√	

[1] To be considered as a participating retailer for discounted lighting products, the retailer's sales coming from Pacific Power customers must be a significant majority of their total sales.

Twenty-one local and national retailers promoted efficient appliances on behalf of the program. Table 2 provides the list of 2015 participating downstream retailers and the product types that were redeemed at each location.

Table 2
Participating Downstream Retailers and Redemptions

Retailer	City	Electric Water Heater	Clothes Washer	Freezer	Refrigerator	Evaporative Cooler - Tier 2	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2015
All Your Building Needs	Pomeroy										√
Bemis Home Appliance & TV Ctr	Yakima		√	√							
Best Buy #831	Yakima		√	√							
Dependable Appliance	Pasco										√
Ferguson Enterprises	Yakima										√
Ferguson Enterprises, Inc	Walla Walla										√
Fred's Appliance	Kennewick		√								
Home Depot #4727	Yakima	√	√	√		√	√			√	
Home Depot #4735	College Place	√	√	√	√		√				
Inland Lighting Centre	Yakima										√
Inland Pipe & Supply	Yakima										√
Lowe's #3240	Yakima	√	√	√	√		√			√	
Probuild Northwest	Yakima						√	√	√		
Sears #2029	Union Gap	√	√	√							
Sears #3088	Sunnyside		√								
Sears #5332	Toppenish										√
Sears #6914	Walla Walla	√	√	√							
Suffield Furniture Company	Dayton										√
True Value Hardware #5353	Selah										√
TV Towne	Walla Walla										√
TV Towne	Yakima										√

The Company worked with 60 HVAC trade allies as shown in Table 3 to promote efficient central air conditioners (CAC) and heat pumps, duct sealing and insulation.

Table 3
HVAC Contractors

Trade Ally	City	CAC Best Practice Installation & Sizing	CAC Equipment	Duct Sealing	Duct Sealing & Insulation	Electric System to Heat Pump Conversion	Heat Pump, Ductless	Heat Pump, Single-Head, Ductless	Heat Pump - PTCS Commissioning, Controls, and Sizing	Heat Pump to Heat Pump Upgrade	No Redemptions in 2015
A & N Heating and Cooling, LLC.	Walla Walla										√
Absolute Comfort Technology, LLC	Selah					√	√	√			
Absolute Comfort, LLC.	Yakima										√
AccuTemp Heating and Air Conditioning	Yakima					√					
Ackerman Heating & Air	Colfax					√					
AEH Inc.	Kennewick										√
Air F/X LLC	Yakima										√
All Assured Electric, Inc.	Kennewick										√
All Phase Refrigeration & Heating Inc.	Kennewick										√
All Seasons Heating & Air Conditioning	Yakima					√	√			√	
Allard Enterprises	Yakima										√
A-One Refrigeration & Heating	Kennewick										√
Apollo Sheet Metal Inc.	Kennewick					√					
Aztec Heating & AC, Inc.	Grandview					√					
Bid Mechanical	Kittitas										√
Blaze to Blizzard Heating & Cooling	Walla Walla						√				
Bob Rhodes Heating & Air Conditiong Inc	Kennewick										√
Bruce Mechanical Inc	Kennewick		√	√		√					
Campbell & Company	Pasco		√	√	√	√	√		√	√	
Central Mechanical Services	Yakima					√					
Chapman Heating & Air Conditioning Inc	Dayton					√	√				
CK Home Comfort Systems	Grandview					√	√		√		

Trade Ally	City	CAC Best Practice Installation & Sizing	CAC Equipment	Duct Sealing	Duct Sealing & Insulation	Electric System to Heat Pump Conversion	Heat Pump, Ductless	Heat Pump, Single-Head, Ductless	Heat Pump - PTCS Commissioning, Controls, and Sizing	Heat Pump to Heat Pump Upgrade	No Redemptions in 2015
College Place Heating & Air Conditioning	College Place	√	√	√	√	√	√		√	√	
CP Mechanical, LLC.	Yakima										√
Darby Heating & Air	Richland										√
Dave's Heating & AC	Yakima										√
Dayco Inc	Kennewick										√
Delta Heating and Cooling, Inc.	Richland										√
Elite Energy Solutions	Lindon, UT										√
E-Star Northwest LLC	Sequim										√
Farwest Climate Control	Yakima					√	√			√	
Four Seasons HVAC	Yakima						√				
Grassi Refrigeration	Walla Walla						√				
Intermountain West Insulation	Kennewick										√
Jacobs & Rhodes	Kennewick										√
Johnny's Heating and Cooling	Walla Walla										√
Miller & Trujillo Heating and AC, LLC.	Zillah					√					
Mountain Air Heating & Cooling Inc.	Yreka, CA										√
Nico Enterprises, LLC	Walla Walla						√				
Olmstead Electric/ CGO Inc	Walla Walla										√
One Hour Heating and A/C	Yakima			√			√				
Panchos Heating & Cooling LLC	Kennewick										√
Platte Heating & AC	Yakima					√	√				
Plumbing Excellence, Inc.	West Valley City, UT										√
Polar Heating & Air Conditioning	Selah										√
Quality Comfort	Yakima					√	√				
Rainwater Inc.	Grandview										√
Richart Family, Inc	Vancouver										√
Roger L Gibson	Richland										√
Schaefer Refrigeration	Walla Walla										√
Smith Insulation	Walla Walla			√	√						

Trade Ally	City	CAC Best Practice Installation & Sizing	CAC Equipment	Duct Sealing	Duct Sealing & Insulation	Electric System to Heat Pump Conversion	Heat Pump, Ductless	Heat Pump, Single-Head, Ductless	Heat Pump - PTCS Commissioning, Controls, and Sizing	Heat Pump to Heat Pump Upgrade	No Redemptions in 2015
ThermalWise Heating and Refrigeration	Walla Walla										√
Thermex Valley Heating and AC	Yakima										√
TJ's Refrigeration, Heating & Air	Sunnyside					√	√				
TNG Heating & Refrigeration	Toppenish										√
Total Comfort Solutions, LLC	Walla Walla		√			√	√		√	√	
Total Energy Management	Richland								√		
Total Quality Air	Pasco										√
Vance Heating and AC	Yakima		√	√		√	√			√	
Young's Heating & Cooling, LLC	Walla Walla						√			√	

Table 4 lists 47 plumbing trade allies the Company worked with to promote efficient plumbing technologies.

Table 4
Plumbing Contractors

Trade Ally	City	Heat Pump Water Heater	No Redemptions in 2015
A & N Heating and Cooling, LLC.	Walla Walla		√
AccuTemp Heating and Air Conditioning	Yakima		√
AEH Inc.	Kennewick		√
Air F/X LLC	Yakima		√
All Assured Electric, Inc.	Kennewick		√
All Seasons Heating & Air Conditioning	Yakima		√
A-One Refrigeration & Heating	Kennewick		√
Apollo Sheet Metal Inc.	Kennewick		√
Aztec Heating & AC, Inc.	Grandview		√
Bid Mechanical	Kittitas		√
Bob Rhodes Heating & Air Conditiong Inc	Kennewick		√
Bruce Mechanical Inc	Kennewick		√
Burke's Plumbing	Selah		√
Campbell & Company	Pasco		√
Central Mechanical Services	Yakima	√	
Chris Johnson Plumbing	Walla Walla		√
CK Home Comfort Systems	Grandview		√
College Place Heating & Air Conditioning	College Place		√
Darby Heating & Air	Richland		√
Dave's Heating & AC	Yakima		√
Dayco Inc	Kennewick		√
Delta Heating and Cooling, Inc.	Richland		√
E-Star Northwest LLC	Sequim		√
Four Seasons HVAC	Yakima		√
Grassi Refrigeration	Walla Walla		√
Jacobs & Rhodes	Kennewick		√
Johnny's Heating and Cooling	Walla Walla		√
Ken Adams Plumbing, Inc.	Walla Walla	√	
Miller & Trujillo Heating and AC, LLC.	Zillah	√	

Trade Ally	City	Heat Pump Water Heater	No Redemptions in 2015
Mountain Air Heating & Cooling Inc.	Yreka, CA		√
Olmstead Electric/ CGO Inc	Walla Walla		√
One Hour Heating and A/C	Yakima		√
Platte Heating & AC	Yakima		√
Quality Comfort	Yakima		√
Rainwater Inc.	Grandview	√	
Ray's Plumbing, Inc.	YAKIMA	√	
Richart Family, Inc	Vancouver		√
Roto-Rooter Plumbing	Yakima	√	
ThermalWise Heating and Refrigeration	Walla Walla	√	
Thermex Valley Heating and AC	Yakima		√
TJ's Refrigeration, Heating & Air	Sunnyside		√
TNG Heating & Refrigeration	Toppenish		√
Total Comfort Solutions, LLC	Walla Walla		√
Total Energy Management	Richland		√
Total Quality Air	Pasco		√
Vance Heating and AC	Yakima	√	
Young's Heating & Cooling, LLC	Walla Walla		√

Table 5 lists 29 weatherization trade allies the Company worked with.

Table 5
Weatherization Contractors

Trade Ally	City	Air Sealing	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2015
Allard Enterprises	Yakima						√
Benko Enterprises	Walla Walla						√
Central Valley Glass	Yakima					√	
Chon Insulation and Drywall	Walla Walla						√
Clarkston Glass	Clarkston					√	
Dave's Heating & AC	Yakima						√
Don Jordan Energy Systems	Yakima		√	√	√		
Elite Energy Solutions	Lindon, UT		√				
E-Star Northwest LLC	Sequim						√
Farwest Climate Control	Yakima						√
High Desert Glass	Prosser						√
Home Improvement Products	Moxee					√	
Intermountain West Insulation	Kennewick		√	√	√		
Jackson Siding and Windows	Walla Walla					√	
K-5 Contracting, Inc.	Yakima		√				
McKinney Glass Inc.	Yakima					√	
Merck General Construction LLC	Grandview		√				
Miller Glass Co.	Yakima						√
Perfection Glass, Inc.	Kennewick					√	
Pro Build	Yakima						√
Richart Family, Inc	Vancouver						√
Sierra West & Associates, LLC.	Midvale, UT						√
Smart Energy Today	Olympia						√
Smith Insulation	Walla Walla	√	√	√	√	√	
Specialty Weatherization & Technologies	Naches			√			
Vineyard Creek Construction	Walla Walla						√
Vinyl Products Inc	Spokane					√	
West Valley Glass & Window	Yakima					√	
Windows Walla Walla	Walla Walla					√	

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Appendix 4
Communications

Energy Efficiency Communications 2015 (only showing new creative)

Creative *(click on the hyperlinks below to see the creative)*

Print

- Farm Bureau ad *Neighbor's Magazine*
- *Farm Bureau Newspaper* (black & white)
- Ad to thank business customers and vendors for being wattsmart in 2015
- Newspaper ad featuring Kenyon Zero Storage Inc.
- Newspaper ad featuring business customer Shields Bag and Printing
- (Spanish) wattsmart family

Digital Ads:

- "Being a wattsmart Business does wonders for your bottom line" (Static)
- "Being a wattsmart Business does wonders for your bottom line" (Animated)
- wattsmart Starter Kits - 300x250, 728x90
- **Pandora**
  See ya later, refrigerator: audio and image

Inserts:

- March SYLR Insert
- April LED Insert
- June SYLR Insert
- June HVAC Insert
- June HES Cooling Insert
- September wattsmart starter kit insert
- August SYLR Insert

Newsletters:

- January *Voices*
- February Energy Insights
- March *Voices*
- April *Voices*
- May wattsup insert
- June Energy Insights

- July *Voices*
- August Energy Insights
- September *Voices*
- October wattsup insert
- November *Voices*
- November Energy Insights

Outer Envelope:

- January
- February
- March
- July
- October

Direct mail:

- wattsmart Starter Kit (3/16)
- Monthly low-income weatherization mailing
- Monthly low-income weatherization mailing
- Home Energy Reports with refrigerator recycling message panel
- Mailing to irrigation customers encouraging application for incentives:
    - Letter
    - Application
- wattsmart Starter Kit (6/15)
- Wattsmart Business incentive and rebate offer mailing, to 150 Washington compressed-air system customers (week of June 22)
    - Letter
    - Brochure
- wattsmart Starter Kits - English/Spanish (7/17)

Emails:

- wattsmart Business retail/office email 2/27
- Energy Connections for midsize business customers (3/17)
- Voices (3/20)
- eVoices (5/4)
- wattsmart Business restaurant/lodging email 5/5

- Energy Connections for midsize business customers (5/19)
- Energy Insights
- wattsmart Business eBlast: HVAC upgrades (6/23)
- wattsmart Business convenience/grocery email (8/3)
- wattsmart Business lighting lunch and learn email invite (8/27)
- Energy Connections for midsize business customers (9/15)
- wattsmart Business LED instant incentives email (9/24)
- wattsmart Business lighting controls email (11/19)

Collateral:

wattsmart

- Winter wattsmart handout
- wattsmart Business - overview
- wattsmart Business – overview Spanish
- wattsmart Business - brochure
- Business Solutions Toolkit handout
- Business Solutions Toolkit tip sheet
- Home Energy Report handout
- Home Energy Savings brochure
- Home Energy Savings incentive list
- wattsmart Business (grocery and convenience stores):
    - Printed
    - Web version
    - Co-branded version
- wattsmart Business (restaurant and lodging businesses):
    - Printed
    - Web version
    - Co-branded version
- Home Energy Savings LED point of purchase
- wattsmart Business LED instant incentives

- Case study: Kenyon Zero Storage energy management project
- wattsmart Business Sunnyside Chamber lighting event flyer
- wattsmart Business Central Washington Hispanic Chamber event flyer

Appendix 5
Washington Energy Efficiency Alliance

Pacific Power

Energy Efficiency Alliance

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The following is a list of contractors, distributors and other businesses participating in Pacific Power's Energy Efficiency Alliance displayed in random order (unless sorted by the user) based on the search criteria selected. This listing is provided solely as a convenience to our customers. Pacific Power does not warrant or guarantee the work performed by these participating vendors. You are solely responsible for any contract with a participating vendor and the performance of any vendor you have chosen.

An asterisk (*) indicates Pacific Power Outstanding Contribution Award winning trade allies in 2009, 2010, 2011, 2012 and/or 2013.

Search Criteria:

Selected State(s):	Washington
Specialties:	Lighting HVAC - unitary HVAC - evaporative Motors and VFDs Controls Building envelope Appliances Office equipment Food Service Compressed Air Farm and Dairy Irrigation Other
Business Type:	--ANY--

Search Results: 76 - Date and Time: 03/03/2015 06:08:28 PM

	Specialties	Business Type	Join Date	Projects Completed
A & T Quality Electric LLC 4271 N Wenas Rd Selah, WA - 98942 Phone: 509-985-9890	HVAC - unitary Lighting Motors and VFDs	Contractor	07/15/2009	5
Absolute Software, Inc. 430-11401 Century Oaks Terrace Austin, TX - 78758 Phone: 512-600-7455 Website: www.absolute.com	Other: Other Specialty	Manufacturer - Rep Other: Software Company	02/11/2014	
All Seasons Heating & Air Conditioning* 302 S. 3rd Ave. Yakima, WA - 98902 Phone: 509-248-6380 Website: www.allseasonsheating.com	HVAC - unitary	Contractor	06/01/2004	3
All-Phase Electric, Inc.* 2500 S 12th Ave Union Gap, WA - 98903 Phone: 509-454-5093 Website: allphaseelectric.org	Lighting	Contractor	06/08/2006	34
All-State Electric Co.* 310 S. 1st Street Selah, WA - 98942 Phone: 509-941-8739 Website: telkonet.com	Lighting Motors and VFDs Other: Other Specialty	Contractor	01/20/2009	35
Allard Enterprises 4506 Maple Ave. Yakima, WA - 98901 Phone: 509-575-0955	HVAC - unitary Motors and VFDs	Contractor	04/01/2006	
Apollo Sheet Metal 1207 W. Columbia Dr. Kennewick, WA - 99336 Phone: 509-586-1104 Website: apollosm.com	HVAC - unitary Motors and VFDs	Distributor	04/01/2006	14

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	Specialties	Business Type	Join Date	Projects Completed
Applied Industrial Technologies - Yakima 909 N. Front St. Yakima, WA - 98901 Phone: 509-457-1600 Website: www.applied.com	Motors and VFDs	Distributor	10/01/2004	
Batteries Plus Bulbs - Walla Walla 632 S 9TH AVE Walla Walla, WA - 99362 Phone: 509-529-7001	Lighting Other: Other Specialty	Distributor	07/23/2014	
C-Mation LLC 3565 S West Temple Salt Lake City, UT - 84115 Phone: 801-268-1425 Website: cmation.com	HVAC - unitary Motors and VFDs	Distributor	04/01/2009	
Central Mechanical Services 2601 Business Lane Yakima, WA - 98901 Phone: 509-248-5944	HVAC - unitary	Contractor	08/01/2004	
Champion Lighting, Inc. 4523 S. Saint Andrews Ln Spokane, WA - 99223 Phone: 509-448-4477	Lighting	Other: Other	01/20/2007	10
College Place Heating and Air Conditioning 970 NE Rose College Place, WA - 99324 Phone: 509-525-8073 Website: www.cpheat.com	HVAC - unitary	Contractor	03/01/2010	
Columbia Electric Supply - Pasco 1913 Washington Street Pasco, WA - 99301 Phone: 509-547-9733 Website: www.columbiaelectricsupplypasco.com	Controls Lighting Motors and VFDs	Distributor	09/09/2014	
Columbia Electric Supply - Sunnyside 2580 Yakima Valley Hwy Sunnyside, WA - 98944 Phone: 509-837-6033	Controls Lighting Motors and VFDs	Distributor	10/23/2014	
Columbia Electric Supply - Walla Walla 932 N 13TH AVE Walla Walla, WA - 99362 Phone: 509-522-1419	HVAC - unitary Lighting Motors and VFDs	Distributor	01/01/2008	2
Consolidated Electrical Distributors - Yakima 131 S. 1st Ave. Yakima, WA - 98902 Phone: 509-248-0872	Lighting	Distributor	01/01/2008	10
Cooper Lighting 1121 Highway 74 South Peachtree City, GA - 30269 Phone: 770-486-3092 x 3092 Website: www.cooperlighting.com	Controls Lighting	Manufacturer - Rep	11/20/2012	null
Current Electric Solution 11979 W. Hwy 12 Lowden, WA - 99360 Phone: 509-526-0161 Website: www.currentelectricsolutions.com	Controls Irrigation Lighting Motors and VFDs Other: Other Specialty	Contractor	12/14/2012	2

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	Specialties	Business Type	Join Date	Projects Completed
Dayco Heating & Air 11 N. Auburn Kennewick, WA - 99337 Phone: 509-586-9464	HVAC - unitary	Contractor	04/01/2006	
Dilbeck Electric, Inc.* 517 S. 2nd Avenue Yakima, WA - 98902 Phone: 509-575-4666	Lighting Motors and VFDs	Contractor	06/01/2005	7
Doyle Electric Inc. 1421 Dell Avenue Walla Walla, WA - 99362 Phone: 509-529-2500 Website: doyleelectric.com	Lighting	Contractor	10/15/2006	8
ecomodus 5110 Tieton Drive Yakima, WA - 98908 Phone: 509-307-4363	Lighting	Contractor	02/01/2012	66
Electrical Frontier Inc. 4240 Thorp Road Moxee, WA - 98936 Phone: 509-945-5703	Lighting	Contractor	07/01/2012	1
Evolve Guest Controls 85 Denton Avenue New Hyde Park, NY - 11040 Phone: 516-448-1862 Website: eguestcontrols.com	Other: Other Specialty	Manufacturer - Rep Other: Other	06/01/2012	
Extra Effort Consulting & Supply 14530 SW 144th Ave. Tigard, OR - 97224 Phone: 503-780-2359 Website: www.ExtraEffortLLC.com	Lighting Motors and VFDs	Distributor	04/01/2012	
FGI, llc 932 W. 32nd Avenue Spokane, WA - 99203 Phone: 800-630-7345 Website: www.fgillumination.com	Lighting	Other: Consultant	03/12/2013	
Grassi Refrigeration 1445 W. Rose Walla Walla, WA - 99362 Phone: 509-529-9700	HVAC - unitary Motors and VFDs	Contractor	06/01/2006	
Greenwalt Electric LLC PO Box 850 Naches, WA - 98937 Phone: 509-949-8223	Lighting Motors and VFDs	Contractor	10/28/2008	12
HanitaTek Window Film 4010 La Reunion Pkwy, #100 Dallas, TX - 75212 Phone: 800-660-5559 Website: www.HanitaTek.com	Building envelope	Engineering Firm	08/06/2013	
Hendon Electric 82075 Hwy 395 N Umatilla, OR - 97882 Phone: 541-922-3844	Lighting	Contractor	03/01/2005	5
Hoydar-Buck Inc. 210 West Orchard Ave Selah, WA - 98942 Phone: 509-697-8800	Lighting	Contractor	09/28/2009	2

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	Specialties	Business Type	Join Date	Projects Completed
Hutchinson Electric Inc. 3660 Washout Rd. Sunnyside, WA - 98944 Phone: 509-391-0770	Lighting	Contractor	02/26/2007	13
K&N Electric Motors, Inc. 9933 N.E. Kinder Rd. Moses Lake, WA - 98837 Phone: 509-765-3399 Website: knelectric.com	Motors and VFDs	Distributor	05/01/2004	3
KAPCO LLC 4207 Ahtanum Rd. Yakima, WA - 98903 Phone: 509-966-4540	Controls Lighting Motors and VFDs	Contractor	03/04/2014	28
Kinter Electric* 2761 E. Edison Rd. PO Box 1058, Sunnyside, WA - 98944 Phone: 509-839-3900 Website: www.kinterelectric.com	Lighting	Contractor	10/31/2009	59
Knobel's Electric Inc. 801 Tenant Lane yakima, WA - 98901 Phone: 509-452-9157 Website: knobelselectric.com	Controls Lighting Motors and VFDs	Contractor	12/30/2014	
Lake Shore Electric, Inc.* 9702 Tieton Dr. Yakima, WA - 98908 Phone: 509-965-4281	Lighting Motors and VFDs Other: Other Specialty	Contractor	05/12/2009	12
Linden Electric, Inc. 9401 Mieras Rd Yakima, WA - 98901 Phone: 509-575-1191	Lighting	Contractor	07/06/2006	9
M & R Electric Inc. 3806 OAK AVE. YAKIMA, WA - 98903 Phone: 509-965-1706	Lighting	Contractor	09/08/2014	
M. Campbell & Company, Inc.* 2828 W Irving St Pasco, WA - 99301 Phone: 509-545-9848 Website: www.callcampbell.com	HVAC - unitary	Contractor	06/01/2004	1
Mantey Heating & Air 3703 W. Nobhill Blvd. Yakima, WA - 98902 Phone: 509-966-5520	HVAC - unitary Motors and VFDs	Contractor	10/01/2005	
Meier Architecture & Engineering 8697 W. Gage Blvd. Kennewick, WA - 99336 Phone: 509-735-1589 Website: meierinc.com	HVAC - unitary Lighting Motors and VFDs Other: Other Specialty	Architect	02/01/2012	
MH Electric Inc.* Po Box 11224 Yakima, WA - 98909 Phone: 509-452-6039	Lighting Motors and VFDs	Contractor	01/06/2010	132
Micro Computer Systems 12631 Beverly Park Road Lynnwood, WA - 98087 Phone: 800-658-1000 x 9889 Website: www.microk12.com	Office equipment Other: Other Specialty	Other: Other	04/01/2012	

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Nico Electrical Contracting P.O. Box 476 Walla Walla, WA - 99362 Phone: 509-526-9658	**Specialties** Lighting	**Business Type** Contractor	**Join Date** 09/21/2012	**Projects Completed** 2
Norstar Electric 11780 Mieras Rd. Yakima, WA - 98901 Phone: 509-961-8161	**Specialties** Lighting	**Business Type** Contractor	**Join Date** 01/01/2006	**Projects Completed** 5
North Coast Electric - Pasco 1928 West A Street Pasco, WA - 99301 Phone: 509-547-9514 Website: www.northcoastelectric.com	**Specialties** Lighting	**Business Type** Distributor	**Join Date** 09/21/2012	**Projects Completed** 4
North Coast Electric - Seattle 2424 8th Ave. So. Seattle, WA - 98134 Phone: 206-436-4444 x 4444 Website: www.ncelec.com	**Specialties** Lighting Motors and VFDs	**Business Type** Distributor	**Join Date** 06/27/2014	**Projects Completed**
North Coast Electric - Spokane 4216 E. Main Avenue Spokane, WA - 99202 Phone: 509-951-3726	**Specialties** Lighting	**Business Type** Distributor	**Join Date** 03/28/2013	**Projects Completed**
North Coast Electric - Wenatchee 1415 N Miller Wenatchee, WA - 98801 Phone: 509-663-8603 Website: www.northcoastelectric.com	**Specialties** Lighting	**Business Type** Distributor	**Join Date** 09/21/2012	**Projects Completed** null
Northwest Electrical Supply Company (NESCO) 111 S. 3rd Ave. Yakima, WA - 98902 Phone: 509-575-0354	**Specialties** HVAC - unitary Lighting Motors and VFDs	**Business Type** Distributor	**Join Date** 09/21/2012	**Projects Completed** 10
Parsons Electric 415 Viewmont Pl. Yakima, WA - 98908 Phone: 509-930-1292	**Specialties** Lighting	**Business Type** Contractor	**Join Date** 08/03/2007	**Projects Completed** 23
Performance Lighting Solutions PO Box 1626 Kalama, WA - 98625 Phone: 360-431-5112	**Specialties** Lighting	**Business Type** Other: General Contractor	**Join Date** 10/11/2013	**Projects Completed** 1
Picatti Brothers Inc. 105 S. 3rd St. Yakima, WA - 98902 Phone: 509-248-2540	**Specialties** Lighting Motors and VFDs	**Business Type** Contractor	**Join Date** 06/18/2009	**Projects Completed** 2
Platt Electric Supply - Walla Walla 415 West Main Walla Walla, WA - 99362 Phone: 509-522-0611 Website: platt.com	**Specialties** Lighting	**Business Type** Distributor	**Join Date** 04/07/2007	**Projects Completed** 24
Platt Electric Supply - Yakima 16 S. 1st Avenue Yakima, WA - 98902 Phone: 509-452-6444 Website: platt.com	**Specialties** Lighting	**Business Type** Distributor	**Join Date** 08/16/2006	**Projects Completed** 96
Pro Controls Inc. 1312 Gordon Rd Yakima, WA - 98901 Phone: 509-388-4186 Website: procontrolsyakima.com	**Specialties** Controls HVAC - unitary Lighting Motors and VFDs	**Business Type** Contractor	**Join Date** 07/01/2012	**Projects Completed** 1

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	Specialties	Business Type	Join Date	Projects Completed
Rainbow Electric, Inc. 1312 Dazet Rd Yakima, WA - 98908 Phone: 509-972-2558 x 105	Building envelope Food Service Lighting Other: Other Specialty	Contractor	06/11/2014	1
Rexel - Capitol Light - Hartford, CT 270 Locust Street Hartford, CT - 06141 Phone: 866-520-2388 Website: www.capitollight.com	Controls Lighting	Distributor	06/13/2014	
Roberts Electrical Inc. 13761 US Highway 12 Naches, WA - 98937 Phone: 509-930-3803	HVAC - unitary Lighting Motors and VFDs	Contractor	05/01/2012	2
Rucker Electric, LLC 9001 Roza Hill Drive Yakima, WA - 98901 Phone: 509-949-5156	Lighting Motors and VFDs	Contractor	01/25/2015	8
S & S Electric 315 White Walla Walla, WA - 99362 Phone: 509-525-7720	Lighting	Contractor	05/31/2005	3
Schaefer Refrigeration, Inc. 2929 E. Isaacs Walla Walla, WA - 99362 Phone: 509-525-2076	HVAC - unitary Motors and VFDs	Contractor	06/01/2004	2
Schneider Electric Buildings Americas, Inc. 95 S. Jackson Street, Suite 300 Seattle, WA - 98104 Phone: 360-823-3040 Website: www.schneider-electric.com	HVAC - unitary Lighting Motors and VFDs	Engineering Firm	10/10/2010	4
Stoneway Electric - Walla Walla 44 S Palouse Street Walla Walla, WA - 99362 Phone: 509-522-1550 Website: stoneway.com	Lighting	Distributor	06/08/2006	4
Stoneway Electric - Yakima 23 N. 3rd Ave Yakima, WA - 98902 Phone: 509-469-6154	Controls HVAC - unitary Motors and VFDs	Distributor	02/26/2008	
Stusser Electric Company 116 N. 2nd Ave. Yakima, WA - 98902 Phone: 509-453-0378	HVAC - unitary Lighting Motors and VFDs	Distributor	04/28/2007	22
T&M Heating PO Box 3120 2711 S. 5th Ave, Union Gap, WA - 98903 Phone: 509-575-1088	HVAC - unitary	Contractor	07/01/2004	
Thermex Valley Heating & AC 1916 Fruitvale Blvd. Yakima, WA - 98902 Phone: 509-965-0630 Website: thermexvalley.com	HVAC - unitary Motors and VFDs	Contractor	07/01/2004	
Thunder Electric Inc. 704 River Road Yakima, WA - 98902 Phone: 509-575-8362	Lighting	Contractor	09/11/2014	

Energy Efficiency Alliance

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	Specialties	Business Type	Join Date	Projects Completed
Tolman Electric 380 Canyon Road Grandview, WA - 98930 Phone: 509-830-1164	HVAC - unitary Lighting Motors and VFDs	Contractor	04/10/2010	3
Total Control Electric Inc. 5 East F Street Yakima, WA - 98902 Phone: 509-453-1021	Lighting Motors and VFDs	Contractor	06/08/2006	11
Total Energy Management 1975 Butler Loop Richland, WA - 99352 Phone: 509-946-4500	HVAC - unitary	Contractor	08/01/2004	2
Walla Walla Electric* 1225 W. Poplar Walla Walla, WA - 99362 Phone: 509-525-8672 Website: wwelectric.com	Lighting	Contractor	04/09/2001	97
Ziegler Electric* 202 Country Crest Rd Yakima, WA - 98901 Phone: 509-930-3300	Lighting	Contractor	04/01/2001	82

Appendix 6
Washington Program Evaluations

Pacific Power

Washington 2015 Evaluations

Program Evaluation Recommendations and Company Responses

Evaluation reports provide detailed information on the process and impact evaluations performed on each program, summarizing the methodology used to calculate the evaluated savings as well as providing recommendations for the Company to consider for improving the process or impact of the program, as well as customer satisfaction.

Outlined below is a list of the programs, the years that were evaluated during 2015 and the third party evaluator who completed the evaluation. Program evaluations are available for review at www.pacificorp.com/es/dsm/washington.html

Program	Years Evaluated	Evaluator
Low Income Weatherization	2011-2012	Smith & Lehmann Consulting
Energy FinAnswer	2012 – 2013	Navigant
FinAnswer Express	2012 – 2013	Navigant

Company responses to the program recommendations contained in the evaluations are provided below.

Table 1
Low Income Weatherization Evaluation Recommendations

Evaluation Recommendations	Pacific Power Action Plan
If agencies continue to serve apartments and/or condominiums in multifamily buildings, Pacific Power should separately analyze energy savings to determine deemed savings specifically attributed to the weatherization of apartment units through an engineering analysis of savings on an individual measure or per-unit basis. Additionally, the specific quantities of installed measures (i.e., sq. feet of insulation) should be tracked.	The program's kWh savings was evaluated based upon a billing analysis. To alter this method would require agencies to submit additional documentation on multi-family dwellings. The recommendation conflicts with the desire for agencies to streamline the reporting requirements and the Company's goal to keep the low income weatherization agency billing/reporting requirements as simple as possible. The Program Manager will discuss this recommendation with internal planning staff and agencies to determine if the additional work required to fulfill this recommendation is warranted.
If agencies continue to serve apartments and/or condominiums, Pacific Power should discuss existing commercial DSM programs with agencies, and also consider developing an option for full building upgrades.	Commercial incentives are available for efficiency upgrades related to common areas in apartment building. Pacific Power will communicate appropriate incentives and information the agencies.
Continue to collaborate with agencies to find solutions to service more homes and develop deeper levels of energy savings.	The Program Manager will communicate this recommendation to the agencies.
Brand Pacific Power's weatherization program.	Pacific Power has implemented this recommendation.
Initiate discussions with WA WAP agencies in order to increase the percentage of total rebates claimed for repairs to allow agencies to service more of the homes they interact with.	The Program Manager will communicate this recommendation to the agencies. Agencies have not billed for the total amount allowed in the past, so increasing the funding percentage available may not be the solution.

Table 2
Energy FinAnswer Evaluation Recommendations

Evaluation Recommendations	Pacific Power Action Plan
Reduce load factor for motor baselines in ex-ante calculations.	Pacific Power is determining if it will proceed with the recommended proxy energy use as a standard in motor analysis.
Ensure measure classifications in database are correct.	Pacific Power has implemented its Technical Resource Library (TRL) and DSM Central software. These two applications assist in providing the administrative checks and balances to manage measure classification.
Increase awareness of program project opportunities to spur energy savings growth.	The approval of *watt*smart Business has streamlined and enhanced program marketing, and includes new case studies for Energy Management. New program offerings, such as the enhanced small business lighting, help drive energy efficiency awareness.
Consider alternate funding or incentive options to overcome capital barriers for program participants.	Pacific Power is evaluating the viability proceeding with additional funding or incentive options.
Review "delayed," "canceled," or "on hold" projects in order to identify future project leads.	Pacific Power reviews "on hold" projects monthly and "cancelled" projects annually.

Table 2
FinAnswer Express Evaluation Recommendations

Evaluation Recommendations	Pacific Power Action Plan
Review procedure for determining claimed hours of use for lighting projects with savings above 200,000 kWh.	Pacific Power is considering the recommendation and is in the process of determining if it will proceed with the recommended analysis.
When entering lighting project details into the program tracking database, use measure sub-types that allow for greater resolution in the application of effective useful life (EUL) values.	Pacific Power has implemented its Technical Resource Library (TRL) and DSM Central software following Navigant's evaluation. The TRL breaks out lighting measures into subtypes within the database and provides the ability to assign them an individual EUL.
Use greater resolution in the application of effective useful life (EUL) values in the program tracking database.	Pacific Power has implemented recommended changes due to the TRL and DSM Central.