2019
Annual Conservation Plan - Washington

November 15, 2018

PACIFIC POWER
A DIVISION OF PACIFICORP

Contents

Executive Summary

On November 1, 2017, Pacific Power & Light Company (Pacific Power), a division of PacifiCorp, submitted its Biennial Conservation Plan with the Washington Utilities and Transportation Commission (Commission) including, as an Appendix, the 2018-2019 Demand-side Management Business Plan, which contained information on budgets and programs that the company will use to achieve its target.

To achieve its biennial conservation target (BCT) the Company offers comprehensive programs for residential and non-residential customers.

Program or initiative	Residential	Non-residential
Low Income Weatherization	√	
Home Energy savings	√	
Home Energy Reports	√	
wattsmart Business		√

2018-2019 Savings and expenditure changes compared to original plan		
	MWh	$
Residential	(3,663)	1,325,633
Non--residential	3,474	(668,661)
NEEA	(98)	
Portfolio		(269,275)
2018-2019 total portfolio benefit cost ratios (including Non-Energy Impacts)		
PacifiCorp Total Resource Cost Test (PTRC)	1.19	
Utility Cost Test	1.47	

By November 15, 2018, as required by WA 480-109-120 (2) and Items 4 and 5 of the Conditions List for order 01 of Docket UE-171092, the Company must file with the Commission an annual conservation plan containing any changes to program details and an annual budget. The Company has updated the Nov 2017 Demand-side Management Business Plan to create the 2019 Annual Conservation Plan. This methodology is consistent with the last biennial period.

The 2019 Annual Conservation Plan reflects updated savings projections and budgets by program or initiative for 2018 and 2019 and utilizes the best information available in October 2018. Consistent with the development of the Biennial Conservation Plan, the 2019 Annual Conservation Plan incorporates the impacts of changes to the unit energy savings (UES) made by the Regional Technical Forum (RTF) through October 1, 2018. This “floating UES” approach represents a change from the last biennial period when the UES values were “locked”.

The updates in the 2019 Annual Conservation Plan reflect the following changes:

- Provides a revised estimate of savings and costs for 2018-2019 utilizing actuals available as of September 2018.
- Incorporates a revised NEEA savings forecast.
- Be WattSmart, Begin at Home, Customer Outreach and Communications and the funding for end use load research remain the same as the original plan,
- Revises program details for the ***watt***smart Business changes effective January 1, 2019
- Revised program details for Home Energy Savings changes effective January 1, 2019.
- Provides updated information for Pilots and Staff Areas of Interest
- Updates the Company's customer communications and outreach plans, and
- Provides cost-effectiveness analysis for the updated 2018-2019 portfolio.

This Business Plan includes a section with the following information for each DSM program:

- Program, initiative and/or project descriptions
- Description of planned program changes
- Program evaluation update[1]
- Program details including specific measures, incentives, and eligibility requirements

2018-2019 Budget and Savings by Program

Table 1 below provides the projected savings and expenditures by program, initiative, and sector to achieve the 78,268[2] megawatt-hour (MWh) (including line losses) biennial conservation target for 2018 and 2019 described in the Company's 2018-2019 Biennial Conservation Plan, dated November 1, 2017. The "Total Pacific Power Conservation" row, which excludes costs and savings associated with Northwest Energy Efficiency Alliance (NEEA) initiatives, is directly comparable to the BCT noted above. As shown, the Company is projecting to acquire 84,200 MWh in savings over the biennial period, approximately seven percent above the BCT.

[1] Final evaluation reports are available on the Company's website at: http://www.pacificorp.com/es/dsm/washington.html.

[2] 78,268 MWh includes the 2018-2019 biennial conservation target of 74,293 MWh with a corresponding decoupling conservation commitment of 3,975 MWh.

Table 1. 2018 - 2019 Biennial Target Savings and Budget Projections by Program

	2018 PacifiCorp Washington Conservation Estimates			2019 PacifiCorp Washington Conservation Estimates			2018 + 2019
Program or Initiative	**Gross kWh/Yr Savings @site**	**Gross kWh/Yr Savings @gen**	**Estimated Expenditures**	**Gross kWh/Yr Savings @site**	**Gross kWh/Yr Savings @gen**	**Estimated Expenditures**	**Gross MWh Savings @gen**
Low Income Weatherization (114) [1]	152,592	167,348	$ 1,090,000	152,592	167,348	$ 1,051,000	335
Home Energy Savings (118) [2]	7,404,943	8,121,001	$ 2,224,880	6,921,106	7,590,377	$ 2,515,615	15,711
Home Energy Reports (N/A) [3]	7,300,000	8,005,910	$ 347,251			$ 305,469	8,006
Total Residential Programs	**14,857,535**	**16,294,258**	**$ 3,662,130**	**7,073,698**	**7,757,724**	**$ 3,872,084**	**24,052**
wattsmart Business (140) - Commercial	20,195,588	22,120,430	$ 3,976,170	15,921,706	17,439,204	$ 3,906,480	39,560
wattsmart Business (140) - Industrial	7,521,759	8,135,610	$ 1,412,016	10,101,326	10,925,695	$ 2,367,660	19,061
wattsmart Business (140) - Agricultural	636,248	697,773	$ 157,374	756,049	829,159	$ 190,890	1,527
Total Business Program	**28,353,595**	**30,953,812**	**$ 5,545,560**	**26,779,081**	**29,194,058**	**$ 6,465,030**	**60,148**
Northwest Energy Efficiency Alliance (NEEA) [4]	3,026,141	3,493,503	$ 879,488	3,202,542	3,615,747	$ 861,752	7,109
Total NEEA	**3,026,141**	**3,493,503**	**$ 879,488**	**3,202,542**	**3,615,747**	**$ 861,752**	**7,109**
Be wattsmart, Begin at Home	-	-	$ 60,000	-	-	$ 60,000	-
Customer outreach/communication	-	-	$ 250,000	-	-	$ 250,000	-
Program Evaluations (& savings verification) [5]	-	-	$ 323,283	-	-	$ 436,473	-
Potential study update/analysis [6]	-	-	$ 101,651	-	-	$ 25,374	-
Technical Reference Library [7]	-	-	$ 27,400	-	-	$ 50,360	-
End use load research			$ 41,762			$ 61,077	
Total Portfolio-Level Expenses	**-**	**-**	**804,096**	**-**	**-**	**883,284**	**-**
Total PacifiCorp Conservation [8]	**43,211,130**	**47,248,071**	**$ 10,011,786**	**33,852,779**	**36,951,782**	**$ 11,220,398**	**84,200**
Total System Benefit Charge Conservation	**46,237,270**	**50,741,574**	**10,891,274**	**37,055,321**	**40,567,529**	**$ 12,082,150**	**91,309**
Total Conservation	**46,237,270**	**50,741,574**	**$ 10,891,274**	**37,055,321**	**40,567,529**	**$ 12,082,150**	**91,309**

Notes for Table 1:

1. Low income forecasts for 2018 and 2019 are based on forecasts from the community action agencies. The per-home savings of 1,122 kilowatt-hour (kWh) are from the draft 2013-2015 program evaluation and are lower than those used in the 2016-2017 biennial period.

2. The forecast for Home Energy Savings includes the impacts of adjustments for updated cost and savings information for certain appliances, lighting, building shell and heating, ventilation and air-conditioning (HVAC) measures available from Regional Technical Forum (RTF) updates through October 1, 2018.
3. Forecasted savings for the Home Energy Reports program are based on estimates provided by Bidgely, the replacement provider for these services. 2018 savings reflect actions taken during 2018 by customers who were enrolled in the program at the end of 2017 (the end date for OPower/Oracle delivery contract). Savings are being reported for a 'go dark" period (January 2018 through August 2018) when customers were not receiving reports and for the September through December 2018 period when the new Home Energy Reports are delivered by Bidgely. Lifetime savings used for economic analysis are based on a two-year measure life consistent with prior biennial period. First year and second year incremental savings as measured by program impact evaluations will be counted toward the biennial conservation target.

4. Includes both Pacific Power's direct funding of NEEA and the Company's internal management costs. NEEA 2018 and 2019 forecasted expenditures are based on Pacific Power's share (2.554 percent) of the estimated annual costs provided in NEEA's 2015-2019 Business Plan approved in June 2014. The 2018-2019 biennial electric savings forecast was provided by NEEA and includes savings above the Council's 7th power plan baseline and excludes the estimate of savings from local programs including those operated by Pacific Power and the rest of the region's utilities/program administrators. Savings from NEEA's trackable measures category are not included in this forecast. See the Biennial Conservation Target section of the 2018-2019 Biennial Conservation Plan for Pacific Power treatment of NEEA savings consistent with the order received in docket UE-100170.

5. For detail on planned evaluations, see the program detail sections in this Annual Conservation Plan.

6. Potential study update and analysis costs for 2018 and 2019 represent residual study costs necessary to prepare for the 2020-2029 10-year conservation forecast and 2020-2021 biennial conservation target. These costs are subject to change as new requirements become effective.

7. Technical Reference Library (TRL) costs are the costs necessary for on-going maintenance and updates to the system.
8. Excludes costs and savings associated with NEEA initiatives. Savings in this row are directly comparable to the Company's Biennial Conservation Target.

Changes to the 2018-2019 Biennial Savings and Budget projections

In 2018, the general trend of slightly lower residential savings being offset with slightly higher savings from business customer participants continued. In addition, residential savings are becoming slightly more expensive to acquire. The table below provides information by program.

	Business Plan Nov. 1, 2017, updated 11/27/2017	2019 Annual Conservation Plan November 15, 2018	Variance	Business Plan Nov. 1, 2017, updated 11/27/2017	2019 Annual Conservation Plan November 15, 2018	Variance
	2018-2019			2018-2019		
Program or Initiative	Gross MWh Savings @ gen			Estimated Expenditures		
Low Income Weatherization (114)	335	335	-	$ 1,502,000	$ 2,141,000	$ 639,000
Home Energy Savings (118)	17,839	15,711	(2,127)	$ 4,253,246	$ 4,740,495	$ 487,249
Home Energy Reports (N/A)	9,541	8,006	(1,535)	$ 453,335	$ 652,720	$ 199,385
Total Residential Programs	**27,715**	**24,052**	**(3,663)**	**$ 6,208,581**	**$ 7,534,214**	**$ 1,325,633**
wattsmart Business (140) - Commercial	28,509	39,560	11,050	$ 6,636,504	$ 7,882,650	$ 1,246,146
wattsmart Business (140) - Industrial	26,507	19,061	(7,445)	$ 5,677,245	$ 3,779,676	$ (1,897,569)
wattsmart Business (140) - Agricultural	1,658	1,527	(131)	$ 365,502	$ 348,264	$ (17,238)
Total Business Programs	**56,674**	**60,148**	**3,474**	**$ 12,679,251**	**$ 12,010,590**	**$ (668,661)**
Northwest Energy Efficiency Alliance (NEEA)	7,207	7,109	(98)	$ 1,741,240	$ 1,741,240	$ -
Total NEEA	**7,207**	**7,109**	**(98)**	**$ 1,741,240**	**$ 1,741,240**	**$ -**
Be wattsmart, Begin at Home				$ 120,000	$ 120,000	$ -
Customer outreach/communication				$ 500,000	$ 500,000	$ -
Program Evaluations (& savings verification)				$ 1,002,331	$ 759,755	$ (242,576)
Potential study update/analysis				$ 165,914	$ 127,025	$ (38,889)
Technical Reference Library				$ 65,570	$ 77,760	$ 12,190
End use load research				$ 102,839	$ 102,839	$ -
Total Portfolio-Level Expenses				**$ 1,956,654**	**$ 1,687,379**	**$ (269,275)**
Total PacifiCorp Conservation	**84,389**	**84,200**	**(189)**	**$ 20,844,486**	**$ 21,232,184**	**$ 387,697**
Total System Benefit Charge Conservation	**91,596**	**91,309**	**(287)**	**$ 22,585,726**	**$ 22,973,424**	**$ 387,697**
Total Conservation	**91,596**	**91,309**	**(287)**	**$ 22,585,726**	**$ 22,973,424**	**$ 387,697**

Key Changes in the Savings Forecast

- Home Energy Savings: In 2018, lighting savings continues to decline as fewer replacement lamps are sold and the lamps deliver lower savings. This trend is part of the continued shift to long lasting LED's and an increase in efficient equipment in the current practice baseline used to measure savings. Non-lighting activity is higher than originally forecast, primarily as the result of increased ductless heat pump installations and manufactured home duct sealing. This trend is forecasted to continue in 2019. Traditional quick hit opportunities such as energy savings kits are declining in proportion to the decline in remaining eligible customers.

- Home Energy Reports: 2018 savings are approximately 15% less than those included in the November 2017 Business Plan. The lower 2018 savings estimates are based on current information provided by Bidgely, the replacement provider of Home Energy Reports that started work in 2018. Savings in 2018 reflects actions taken by customers already enrolled in the program at the end of 2017 during two periods; between January through August when customers did not receive reports and between September and December when customers received the new report which included end use disaggregation. While savings will continue to be tracked and reported in 2019, Bidgely is not currently forecasting incremental savings for 2019.

- ***watt***smart Business: 2018 savings are higher than originally forecast in November 2017 driven primarily by increased lighting savings as business customers increasingly upgrade to LEDs as costs decline.

- NEEA: revised savings estimate from NEEA utilizing the same methodology and baselines used to establish the original forecast indicate savings are down by approximately 5% with the heat pump water heaters, Certified Refrigeration Energy Specialist, and Commissioning initiatives generating the most significant adjustments.

Key Changes in the Expenditure Forecast

- Low Income Weatherization: additional costs were added in anticipation of a recently added community action agency beginning to complete homes and the possibility of state funds being fully utilized and requiring a larger number of projects to be fully funded by the Company.

- Home Energy Savings: Incentive costs are increasing as non-lighting measures like heat pumps and duct sealing replace lower cost measures such as lighting. Delivery costs are also trending upward which reflect the complexity and higher touch required to deliver the increasing share of non-lighting measures including deep retrofit and new homes. The traditional opportunities to mitigate costs with energy savings kits is diminishing as the eligible customer counts continue to shrink.

- Home Energy Reports: Delivery costs tie to the current delivery contract and are higher than the costs included in the November 2017 Business plan which were based proposal information available at the time.

- wattsmart Business: Expenditures are lower in 2018 and 2019 relative to the November 2017 Business Plan. One driver of the reduction was lower program incentive payments due to customer projects being completed with lower costs than originally estimated. In addition, the program has multiple delivery channels that vary in terms of savings acquisition costs. In the updated forecast, savings from lower cost delivery channels (such as midstream lighting) offset some savings from higher cost delivery channels.

- Program evaluation (and savings verification): costs are lower based on recent re-procurement of key program evaluation activities for the biennial period.

Direct Benefits to Customers

Estimates of direct benefits to customers delivered by the 2018-2019 expenditures including all portfolio costs are provided in **Error! Reference source not found.** The percentage of direct benefit to customers is consistent with the November 2017 Business Plan when all portfolio expenses are included.

Program or Initiative	Estimated Expenditures	Direct Benefit to Customer ($)	Direct Benefit to Customer (%)
Low Income Weatherization (114)	$ 2,141,000	$1,712,800	80%
Home Energy Savings (118)	$ 4,740,495	$2,690,493	57%
Home Energy Reports (N/A)	$ 652,720		
Total Residential Programs	$ 7,534,214		
wattsmart Business (140) - Commercial	$ 7,882,650		
wattsmart Business (140) - Industrial	$ 3,779,676		
wattsmart Business (140) - Agricultural	$ 348,264		
Total Business Programs	$ 12,010,590	$7,196,292	60%
Northwest Energy Efficiency Alliance (NEEA)	$ 1,741,240	$1,183,480	68%
Total NEEA	$ 1,741,240		
Be wattsmart, Begin at Home			
Customer outreach/communication			
Program Evaluations (& savings verification)			
Potential study update/analysis			
Technical Reference Library			
End use load research			
Total Portfolio-Level Expenses			
Total PacifiCorp Conservation			
Total System Benefit Charge Conservation			
Total Conservation	$ 22,973,424	$12,783,065	56%

Notes for Table

- Low Income Weatherization: Payments to community action agencies for measure installation are included as direct benefits to customers. This percentage is based on an estimate that aligns with the information provided in the 2018-2019 DSM Business Plan.
- Home Energy Savings: Customer incentives, upstream, mid-stream and mail-by-request buy downs are included as direct benefits to customers.
- wattsmart Business: Customer incentives and expenditures for customer site-specific energy engineering ($1,042,032) are included as direct benefits to customers.
- NEEA: This value is unchanged from the 2018-2019 DSM Business Plan and is arrived at by subtracting $50,555 in internal management costs and applying the 70 percent estimate provided by Staff to NEEA funding to calculate the direct benefit to customers.

Pilots

Pursuant to WAC 480-109-100 (1) (c), the Company must implement pilot projects when appropriate and as long as the overall portfolio remains cost effective. In considering which pilots to pursue, the Company focused on its unique service territory (small towns and rural), delivery infrastructure and other partners. Pilots described here have been presented to the Company's DSM Advisory Group for review and comment. Within the programs described in detail below, the Company plans to pursue the following pilot initiatives in 2018-2019:

- **On-Bill Financing for residential customers.**
    - **Purpose**: Reduce upfront cost barrier to participation in residential energy efficiency programs by offering on-bill financing for 2018-2019. The residential offer complements the third party financing already in place for our business customers.
    - **Costs**: Start-up costs are estimated at approximately $30,000 and will be included as a residential program expenses and recovered through the tariff rider. Pacific Power internal on-going loan administration costs will also be included as a program expense and recovered through the tariff rider. Pacific Power is not loaning its own funds and will not be receiving any interest income from loan payments.
    - **Size**: The Company expects between 100-150 completed loans for the two-year period.
    - **Implementation**: Build upon experience from Oregon utilizing a specialized firm, Craft3, to operate as funder and loan administrator for on-bill financing for residential customers who participate in the Home Energy Savings program. Similar to Oregon, Pacific Power will provide on-bill servicing functions. Financing will be available for the net (after incentives) costs of equipment eligible for incentives through HES program. There will not be a utility service disconnect option for collection or security purposes. Partial payments will be applied to the utility bill first giving Pacific Power payment priority.
    - **Marketing**: The offer will be marketed primarily through installing contractors and the HES program administrator and Craft3 will work jointly to identify and train contractors. Marketing and screening will be put in place to help insure customers eligible for low income services are directed to the community action agencies instead of participating in the loan offer. Craft3 is exploring whether an offer for customers who own a manufactured home, but rent space from a manufactured home park owner could be designed.
    - **2019 Update**; Group and individual training conducted with trade allies and Sustainable Living Center in Walla Walla. Training included information on services for income qualified customers. Twelve applications have been approved by early November. Three applications have been rejected based on credit score

and utility payment history. Exploration of an offer for owned manufactured homes on rented space has not yielded any meaningful results to date since the tactics to secure a loan through a standard Uniform Commercial Code (UCC) filing does not exist in cases where the property is rented. Mitigating security risk can be done with other tactics such as higher interest rates or loan fees but the exact economics are unknown at this point. Craft3 is continuing to explore options with their capital providers and an update on their efforts will be provided at a future DSM Advisory Group.

- **Heat pump dryers.**
  - **Purpose:** Increase stocking, sales and incentive applications for heat pump dryers within Pacific Power's territory. Equipment eligibility aligns with NEEA's Qualified Products List (QPL).
  - **Costs:** Additional administrative budget of approximately $6,000. Included in HES program delivery costs for the biennial period.
  - **Size:** Twelve to 24 units.
  - **Implementation:** Home Energy Savings program team in combination with NEEA. The initiative focuses on smaller retailers with faster decision processes and is a continuation of the work started in 2017. Continue the work in partnership with NEEA to secure preferred pricing and expedited shipping.
  - **Marketing:** Continue sales training and enhanced outreach to smaller independent retailers. Provide a sales performance incentive fund (SPIF) and pay participating sales associates $50 for every qualifying model sold.
  - **2019 update:** loss of NEEA mid-market incentive and loss of retailer interest have materially affected this pilot. Increasing the incentive to $600 as part of 2019 program changes is intended to be simple and address the stated objection (from the retailers) to higher costs in a cost sensitive market.

- **Manufactured Homes Targeted Delivery**.
  - **Purpose:** Increase installation of energy efficiency measures within existing manufactured homes.
  - **Costs:** To be determined from RFP responses and cost effectiveness analysis.
  - **Size:** To be determined from RFP responses and cost effectiveness analysis.
  - **Implementation:** Utilize RFP process for targeted delivery of manufactured homes measures within HES program. Proposals will be evaluated for cost effectiveness inside proposed (2018-2019) HES program. As alternate if proposals not economic, further increase marketing and outreach to home owners, park owners and installing contractors. If possible, Craft3 will tailor/tune on-bill financing offer for owned homes within parks to further increase uptake.
  - **Marketing:** Third party(s) if selected through RFP process, program administrator, installing contractors and park owners.
  - **2019 update:** Proposal evaluation did not reveal any compelling added opportunities beyond what is currently available in the current program. Continued focus on duct sealing. Program field staff is engaged with and encouraging a few HVAC trade allies that are considering whether to offer fixed pricing for ductless heat pump installations in manufactured homes.

- **Residential Deep Energy Retrofit.**
  - **Purpose:** Increase comprehensive (multiple energy using systems) projects in existing residential homes.
  - **Costs:** Up to $20,000 for contractor engagement, project pre-qualification, pre/post modeling and high touch engagement during project including verification/close-out. Included in HES program delivery budgets for the biennial period.
  - **Size:** One to four completed projects.
  - **Implementation:** Establish a baseline model based on prior metered utility consumption and target improvements that will save 40-60 percent of total usage which translates into approximately 8,800 kWh delivered primarily from heating, cooling and water heating improvements. Add a customer incentive of up to $5,000 to the existing HES program.
  - **Marketing:** Work with general contractor to identify existing homes where customers are prepared to make substantial improvements to the systems using or affecting the majority of the energy consumption in the home. The customer incentive is designed to offset a portion of the project costs which are estimated to be $15,000 to $30,000 depending on the size and site conditions of the home.
  - **2019 update:** Two serious projects One moving toward completion in Q4 2018. Make-up air for combustion appliances, especially fireplaces/wood stoves remains challenging. The in process project required some make-up air ducting for an otherwise efficient wood stove that remains as supplemental heat source. The other project is on hold. This customer is acting as his own general contractor and continues to revise the project scope. With the scope in flux, pre-construction energy modeling or support for sub-contractors is not practical. While program support staff remains in contact with the customer, the project is on hold until the scope is refined and finalized.

- **Geo-Targeted Energy Efficiency.**
  - **Purpose:** Focus on increasing participation in specific area(s) where additional value such as possible infrastructure investments has been identified. This is a continuation of work begun in 2017.
  - **Costs:** Additional administrative costs of approximately $16,000 included in the program delivery budgets for the biennial period.
  - **Size:** Approximately 5,800 customers.
  - **Implementation:** The effort will focus on the Yakima area and installed projects will be tracked. A kWh to kilowatt (kW) calculator using existing load shapes is planned. This calculator would allow the Company's field engineering team to start looking for hourly capacity impacts of the installed energy efficiency projects.
  - **Marketing:** Increase frequency of existing program tactics including direct mail, trade ally engagement and personal selling.
  - **2019 update:** kWh to kW calculator development is progressing and will be used to assess 2018 and 2019 impacts.

- **Non-Residential Lighting Controls.**

  - **Purpose:** Increase installation of lighting controls as part of business customer lighting retrofit projects.
  - **Costs:** Included in program delivery budgets
  - **Size:** Up to 15 projects
  - **Implementation:** Leverage the Northwest Energy Efficiency Alliance's Luminaire Level Lighting Control (LLLC) initiative including vendor training support. January 2018 program changes adjusted incentive levels so that lighting combined with controls provides the highest incentive for lighting projects. **Marketing:** NXT Level training and good/better/best communications, continuing and improving lighting controls training for vendors, providing outreach coordinator feedback on lighting controls to approved wattsmart Business Vendors on projects.
  - **2019 update:** Add a limited time $/fixture Contractor Incentive for Luminaire Level Lighting Control in 2019. Contractors face up-front costs of time and money to obtain manufacturer certification(s) to install LLLC products. A contractor incentive (focused on the vendor's first projects only) along with the vendor support provided by the program could boost LLLC participation.

Staff Areas of Interest

In developing its 2018-2019 Biennial Conservation Plan and Business Plan, Staff informed Pacific Power of several areas of particular interest, aside from the requirements of WAC 480-109 and Order 01 of Docket UE-152072. This section discusses each of these areas of interest and how the Company has and will address each during the 2018-2019 biennium.

Low income program design: Review program design and delivery to ensure it is working well, reaching the target audience and there are no program design barriers that should be addressed.

- Low Income weatherization program manager meets regularly with three community action agencies serving Pacific Power customers. During September, the program manager asked for agency feedback on program design and operations. No barriers were identified and the agencies expressed appreciation for the changes, including removal of the funding cap, initiated over the last year effective May 1, 2017. Removal of the funding cap provides additional flexibility for the agencies and Pacific Power to continue to weatherize homes during periods when the state-provided Match Maker funding availability is uncertain. Budgets provided in this plan incorporate uncertainty with 100 percent (no Match Maker) funding for 20-30 homes for each of the two years. Annual budgets are designed to fund treatment of 136 homes year per year which is consistent with activity in prior periods.
- Pacific Power maintains a separate low income advisory group in addition to the DSM Advisory Group and some stakeholders are members of both groups. This common membership helps make sure both groups are aware of any issues (i.e., on-bill financing pilot) that might affect low income program design.

- Program evaluations also provide another opportunity, in addition to the real-time program manager engagement with agencies to identify possible barriers.
- **2019 update**: Training for on-bill financing offer included information for income qualified services. This information is included in every sales presentation made by trade allies and is intended to mitigate the possibility a customer eligible for free services would instead select financing.

Non-energy impacts: Incorporate non-energy impacts into target and biennial conservation plan consistent with regional practice and commission direction.

- Continue existing practice of including quantifiable and directly attributable non-energy impacts quantified by others, specifically the RTF, into conservation planning and cost-effectiveness calculations. Levelized costs for Washington measures provided to the 2017 IRP include these impacts as described in the 2017 conservation potential assessment.[3]
- Non-energy impacts by measure are included in program and portfolio cost-effectiveness provided as Appendix 1 to this Business Plan.
- Action Item ANLYS-8 from the 7th Power Plan called on the RTF to establish guidelines on quantifying non-energy impacts, however, at this time, this work is not complete. Nonetheless, because the RTF has found a causal link between ductless heat pumps and wood smoke and has established a methodology for quantifying and monetizing these impacts, the Company engaged Abt Associates to customize the work already performed by the RTF for ductless heat pumps to its Washington service territory. Abt is performing similar work for the other Washington investor-owned utilities. Non-energy impact information provided by Abt will be used for cost effectiveness assessments during the 2018-2019 period. Including this benefit is not intended to establish precedent in other conservation analysis or other areas prior to further policy discussions or additional direct attribution/causality research that would be required and would satisfy the need to develop RTF guidelines.
- Pacific Power is also participating in the Bonneville Power Administration (BPA) non-energy impact work group. In addition, a Company representative is a voting member of the Regional Technical Forum which develops and maintains guidelines for energy efficiency measures. The RTF Guidelines are being updated to provide more specificity around attribution and quality standards for quantification of non-energy impacts. The Company also has a representative on the Regional Technical Forum Policy Advisory Committee, which has provided some guidance on how to include non-energy impacts.
- Pacific Power's low income weatherization program evaluations include an assessment of non-energy impacts attributable to program operations.
- **2019 update**: Abt study was completed in August 2018 and provided to the Demand-side Management Advisory Group at the October 2018 meeting. The value per kWh is found on page 18 of the final report and the mid-point value (in 2010 $) was escalated to align with the years in the biennial plan. The value of the non-energy impacts specific to wood smoke reductions when ductless heat pumps are installed was included in the cost effectiveness analysis included with the final version of this plan.

[3] PacifiCorp Demand-Side Resource Potential Assessment for 2017-2036., Volume 2, p 2-9.

Hard-to-reach (HTR): As **o**utlined in Chapter Four (Action Plan item MCS-1) of the Seventh Northwest Conservation and Electric Power Plan, "Bonneville and the regional utilities should determine how to improve participation in cost effective programs from any underserved segments" and "…the utilities in their overall data collection should include, to the extent it is readily available, demographic and business characteristic data helps identify the existence of any HTR segments.

- Company representatives are participating in the regional MCS-1 work group, with particular focus on manufactured homes. Approximately 14 percent of all homes in Pacific Power's Washington service territory are manufactured, as compared to approximately nine percent statewide.
- The Company is working with NEEA to combine third-party (credit and assessor) data with manufactured home datasets to provide Pacific Power programs (and the region) added information in one of the traditional HTR segments.
- Manufactured homes, as a traditional HTR segment are also a focus of other Company work planned for 2018-2019, including targeted delivery of measures and potential on-bill-financing specific to manufactured home parks outlined in the Pilots section.
- **2019 update:** The Company's original plan to have NEEA combine PacifiCorp manufactured homes data with NEEA third party income and tax assessor data poses challenges with respect consumer protections found in Washington privacy laws specific to investor owned utilities. These challenges with respect to the privacy laws were communicated to the Northwest Power Planning and Conservation staff member responsible for the MCS-1 work. These challenges on third party data analysis have not impacted the Company's on-going energy efficiency program activity with our Washington customers residing in manufactured homes. Information on energy efficiency activity over multi-years for the manufactured home residents was provided in the 2016 and 2017 annual reports. It will be updated and included in the 2018 annual report.

On- bill financing. Pilot for residential customers proposed for 2018-2019. The residential offer complements third party financing already available for business customers

(E)M&V 2.0. (Evaluation, Measurement, and Verification) Advances in hardware and software permit development of verification techniques and/or evaluation approaches that can provide near instantaneous feedback using available large data sets. Much of the opportunity is available with granular data from advanced metering infrastructure (AMI), but the literature is clear that the techniques also work in non-AMI environments. These opportunities present an alternative to traditional evaluation and verification techniques that may be labor-intensive, have prolonged lag periods and be limited in the data collected. These new approaches are known as **M&V 2.0.** This subtle name change reflects the opportunities for faster verification, while at the same time reflecting the fact that these new techniques don't replace traditional evaluation activities. The 2016 Efficiency Exchange had a session dedicated to the subject including some historical perspective and a review of new techniques.[4] Pacific Power is interested in understanding the applicability of M&V 2.0 to installation verifications using monthly billing data.

[4] EFX16 Session: The Evolution of Evaluation: Revolution or Resolution? EM&V 2.0 New Approaches vs. Traditional Methods. Presentation is available at: https://conduitnw.org/Pages/File.aspx?rid=3436.

- Pacific Power's evaluation team will work with the program team and utilize an M&V 2.0 provider to conduct verifications on a sample of measure installations to assess costs and reliability of using monthly billing data.
- EM&V framework document will be updated to include M&V2.0 definitions
- **2019 update:** The current work plan is to engage an M&V 2.0 practitioner and provide them with information on 2018 residential heat pump installations and see if results can be found in monthly billing data. This work will be conducted on a separate track from the residential program evaluation work that is scheduled to be delivered by the end of 2019.

Residential Program Details

Home Energy Savings (Schedule 118)

Years of Implementation
Pacific Power Electric Service Schedule No. 118 for the Home Energy Savings Program was submitted under Advice Letter No. 06-004 on August 11, 2006. The program was initially approved with an effective date of September 14, 2006.

Program Description
The program provides a broad framework to deliver incentives for more efficient products and services for Washington residential customers with a new or existing home, multi-family unit or manufactured home. A third party administrator hired by the Company delivers the savings and incentives of the program. Operating in tandem, Schedule 118 and the program website (http://www.homeenergysavings.net/Washington/washington_home.html) inform customers and contractors of the offerings and qualifications for incentives.

Measures eligible for incentives include efficient clothes washers, heat pump water heaters, light emitting diode ("LED") lighting, lighting fixtures, heating and cooling equipment, HVAC equipment, insulation, and windows. The program offers mail-by request wattsmart Starter Kits containing free LEDs and customers with electric water heat also receive a free showerhead and aerators. At a discounted cost, customers can pay to upgrade the kit to contain LEDs and a higher quality showerhead. In addition, the program includes a performance path option as well as stand-alone measures for new homes and separate measures for manufactured and multifamily homes.

Incentives are provided in three ways: post-purchase delivery to the customer for the majority of measures, through a retailer and/or manufacturer buy-down for LEDs and fixtures, and direct installation of a measure where the program pays all of the measure and installation cost so there is no cost to the customer. Buy-downs result in lower retail prices for customers at the point of purchase as opposed to post-purchase incentives that customers must submit an application to receive.

Complete details on incentives and services are on the program website and in the tables and copy of the program tariff below.

Program Updates for 2019
The Home Energy Savings program was updated in the fourth quarter of 2018 using the program change process (including Advisory Group review and comment) described below. The changes are effective on January 1, 2019. The information provided in this business plan reflects the program offers/qualification on January 1, 2019. Changes were made to unit energy savings (UES) value consistent the "floating UES" approach implemented in this biennium. UES changes were made to lighting, light fixtures and heat pump water heaters to align with changes made by the Regional Technical Forum through October 1, 2018. The incentive for heat pump dryers was increased to support the pilot. The qualification for smart thermostats was broadened so that any equipment listed on the Energy Star Qualified products list is eligible for incentives. The highest tier (4) for heat pump water heaters was dropped since it is now part of the Tier 3 based on the

latest RTF workbook. During 2019, the program administrator will also offer limited time stocking or completion payments to contractors and/or distributors for selected measures. These payments are included in the program delivery budget.

Planned Program Changes

Future changes including measure additions, deletions, and changes in qualifying standards will be based on cost-effectiveness, participation and evolving codes and standards.

Evaluation Update

Last Evaluation Report:

Program Years	Evaluation Report Date	Completed by
2015-2016	November 9, 2017	The Cadmus Group

Future Evaluation Report(s):

Program Years	Evaluation Report Date	To be Completed by
2017-2018	By year-end 2019	ADM

Program Details

General program details for this program are contained in the program tariff; additional program detail is available on the program website. Any changes to the details included in the program tariff must be filed and approved by the Commission prior to becoming effective. In addition, there are program details managed outside of the program tariff.

The following is provided for reference: The program tariff and the text below from the Advice Letter (Docket UE-061297), filed August 11, 2006, describe the information that is managed outside of the tariff and the process for changes.

> The comprehensive nature of the program and changing equipment standards indicate a flexible and market-driven program delivery is required. The Company is proposing that Schedule 118 outline the basic program elements including customer eligibility, use of a program administrator for delivery, the seasonal nature of selected incentive offers, and that current incentive levels may change. Specific details such as incentive levels, eligible equipment specifications and dates for incentive availability would be managed by the program administrator using a dedicated program Web site with easy links from the Company web site.
>
> Changes in equipment eligibility or minimum efficiency levels would be driven by program and market data. The Company and program administrator will be assessing program performance on an on-going basis and proposing changes at least once per year. Changes may be proposed more frequently if there is compelling market feedback that changes need to occur ahead of the annual changes. Similar to the filing process, the Company would present information on proposed changes to its Advisory Group and seek comments prior to making changes. Changes in equipment specifications or incentive levels would be clearly posted on the Web

site and emailed to the appropriate Commission staff person with at least 45 days advance notice.

The incentive tables, program definitions and custom incentives offered are managed outside of the program tariff on the Company website via the process described above.

The following program information is contained either on the Company's website referenced above or in the program tariffs at the end of this business plan.

Washington Home Energy Savings

Definitions

British Thermal Unit (Btu): It is approximately the amount of energy needed to heat 1 pound of water from 39° to 40° Fahrenheit.

Contractor: Any party that is licensed to install or service HVAC, plumbing, or weatherization equipment or products.

Cubic Feet per Minute (CFM): A measurement of the velocity at which air flows into or out of a space.

Customer: Any party who has applied for, been accepted and receives service at the real property, or is the electricity user at the real property.

Direct Install: Installation of an Energy Efficiency Measure directly by the Program, or a Program-approved contractor or other 3rd party.

Downstream: Payment of incentive made by the Company to a customer, owner, contractor or other approved third party for the purchase or installation of an Energy Efficiency Measure pursuant to an approved energy efficiency incentive application.

Energy Efficiency Incentive: Payments of money made by Company to Owner or Customer or other approved party for installation of an Energy Efficiency Measure pursuant to an approved Energy Efficiency Incentive Application.

Gallons Per Minute (GPM): Volumetric flow rate used in rating equipment which saves water

Heating Seasonal Performance Factor (HSPF): Is the efficiency of heat pumps measured by the ratio of Btu heat output over the heating season to watt-hours of electricity used. The higher the number, the greater the efficiency.

Heating, Ventilation and Air Conditioning (HVAC): Refers to technology of indoor environmental comfort.

Integrated Modified Energy Factor (IMEF): Measures energy consumption of the total laundry cycle (washing and drying). It indicates how many cubic feet of laundry can be washed and dried with one kWh of electricity; the higher the number, the greater the efficiency.

Light Emitting Diode (LED): A semiconductor light source.

Manufactured Homes (mobile homes): A type of prefabricated housing that is largely assembled in factories and transported to the site of use. Units are at least 320 square feet and installed with a permanent chassis to assure the initial and continued transportability of the home.

Market Partner: An approved third party (contractor, retailer, dealer, wholesaler or manufacturer) who installs Energy Efficiency Measures at the real property or sells Energy Efficiency Measures to a Customer or Contractor. Applies to parties in the downstream, midstream, upstream, or direct install delivery channels.

Northwest Energy Efficient Manufactured Home (NEEM): Organization based in the Northwest that certifies new manufactured homes are built to various energy efficient standards such as ENERGY STAR or eco-rated.

New Home: A newly constructed single family residence.

Owner: The person who has both legal and beneficial title to the real property, and is the mortgager under a duly recorded mortgage of real property, the trustor under a duly recorded deed of trust.

Prescriptive incentives: Per unit incentives are listed in the program incentive tables for specific EEMs. Incentives are subject to change.

RTF: Regional Technical Forum

R-Value: Indicates insulation's resistance to heat flow. The higher the R-value, the greater the insulating effectiveness.

Seasonal Energy Efficiency Ratio (SEER): Is the efficiency of air conditioners measured by the cooling output in Btu during a typical cooling-season divided by the total electric energy input in watt-hours during the same period. The higher the unit's SEER rating the more energy efficient it is.

Utility Combined Energy Factor (UCEF): ENERGY STAR uses Combined Energy Factor to compare the energy efficiency of gas and electric clothes dryers in pounds per kilowatt hour. The higher the value, the more efficient the dryer is.

U-Factor: Measures the rate of heat transfer and indicates how well the window insulates. U-factor values generally range from 0.25 to 1.25 and are measured in $Btu/h \cdot ft^2 \cdot °F$. The lower the U-factor, the better the window insulates.

Upstream: Payment of incentive made by the Company directly to a manufacturer, retailer, or other pre-approved vendor to apply a pre-purchase discount for customers.

Incentives

Table 1: Appliance Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Clothes Washers	IMEF ≥ 2.76	$50	
Hybrid/Heat Pump Clothes Dryer	UCEF ≥ 3.20	$600	

Notes for appliance incentives table:

- Incentives for clothes washer apply to mid/upstream and/or downstream. Only one incentive will be provided per qualifying clothes washer.
- Incentives for clothes washers may be paid to the customer, retailer, and/or manufacturer and may be split between customer, retailer, and/or manufacturer. The sum of incentive payments per unit will not exceed the amounts listed in the table. The end use customer portion of the incentive will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- Homes must have either an electric water heating or an electric dryer heat for clothes washers to be eligible for incentives.
- Incentives for hybrid/heat pump clothes dryer apply to mid/upstream and/or downstream. Only one incentive will be provided per qualifying clothes dryer.
- Incentives for hybrid/heat pump clothes dryers may be paid to the customer, retailer, and/or manufacturer and may be split between customer, retailer, and/or manufacturer. The sum of incentive payments per unit will not exceed the amounts listed in the table. The end use customer portion of the incentive will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- See additional requirements on program website.
- Acronyms:
  IMEF: Integrated Modified Energy Factor
  UCEF: Utility Combined Energy Factor

Table 2 - Lighting Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
LED Bulbs (General Purpose)	ENERGY STAR qualified	$0	Up to $3.00
LED Bulbs (Specialty)	ENERGY STAR qualified	$0	Up to $3.00
LED Fixtures	ENERGY STAR qualified (Torchiere and portable products are not qualified)	$0	Up to $23.00

Notes for lighting incentive table:

- Incentives for and LED bulbs and fixtures apply to mid/upstream, mail-by-request, and/or direct install.
- Mail-by-request and direct install are offered on an initiative basis and may not be available for the entire year. See program website for availability information
- LED bulb and fixture must be listed on the program's qualified product list on the program website in order to qualify for an incentive. Qualifying product may be purchased a participating retailers only
- Reduced price LED or fixture offer may end early if entire allocation is sold.
- Acronyms:
  LED: Light Emitting Diode

Table 3 – Single Family HVAC Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Evaporative Coolers -2,000-3,499 CFM	2,000-3,499 CFM	$50	
Evaporative Coolers – 3,500+ CFM	Minimum 3,500 CFM (must be the primary cooling source)	$250	
Central Air Conditioner with Best Practice Installation and Sizing	≥15 SEER Central air conditioner must be installed and sized per program's requirements	$125	
Duct Sealing and Insulation	Rinitial ≤ 2 and replace all existing insulation with at least R-8 Home's primary heat source must be either a heat pump or electric forced air furnace Existing ducts must be unsealed.	$800	
Duct Sealing	Home's primary heat source must be either a ducted heat pump or electric forced air furnace. Insulation removed for purposes of sealing must be reinstalled or replaced after sealing is completed. Existing ducts must be unsealed. Duct sealing must be done per program's requirements	$300	

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Ductless Heat Pump	≥ 9.0 HSPF, single-head or multi-head unit Home's previous primary heating source must either have been an electric forced air furnace or a zonal electric system.	$1,300	
Electronic Line Voltage Thermostat	Must meet Bonneville Power Administration (BPA) specifications. Home's primary heating source must be an electric zonal heating system.	$60	
Heat Pump Commissioning Controls Sizing	Heat Pump must be new and commissioning, controls, and sizing be completed per program requirements	$250	
Federal Standard Heat Pump Conversion with Best Practice Installation and Sizing	For replacement of existing electric furnace with new federal standard efficiency heat pump. Heat Pump must include Best Practices Installation & Proper Sizing.	$1,300	
9.0+ HSPF Heat Pump Conversion with Best Practice Installation and Sizing	For replacement of existing electric furnace with new high efficiency heat pump. ≥ 9.0 HSPF must include Best Practices Installation & Proper Sizing.	$2,000	
Heat Pump Upgrade with Best Practice Installation and Sizing	For upgrade of existing heat pump to new high efficiency heat pump. ≥ 9.0 HSPF must include Best Practices Installation & Proper Sizing.	$300	
Smart Thermostat	Wi-Fi enabled, programmable, online dashboard and/or mobile device app, occupancy sensor	$50	

Notes for HVAC incentive table:

- Incentives for all HVAC measures apply to downstream and/or mid/upstream. Only one incentive will be provided per unit.
- Incentives may be paid to the customer, dealer, manufacturer, and/or trade ally and may be split between customer, dealer, manufacturer, and/or trade ally. The sum of the incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- Maximum of 10 line voltage thermostats per house hold.
- Maximum one smart thermostat per house hold.
- Occupancy sensing feature must be enabled for smart thermostats incentives.
- Homes must have a ducted electric heating system to be eligible of smart thermostat incentives.
- Customers may self-install smart thermostats. Contractor not required.

- Work must be completed per program requirements listed on the program website.
- See additional installation requirements on program website.
- Acronyms:
  SEER: Seasonal Energy Efficiency Ratio
  HSPF: Heating Seasonal Performance Factor
  CFM: Cubic Feet per Minute

Table 4 – Single Family Weatherization Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Insulation – Attic (R	$R_{initial} \leq 19$ $R_{final} \geq 49$	$0.05/sf. for electrically cooled home $0.30/sf. for electrically heated home	$0/sf.
Insulation – Floor (to R-19)	$R_{initial} = 0$ $R_{final} \geq 19$ Home's primary heat source must be electric	$0.20/sf.	$0/sf
Insulation – Floor (to R-30)	$R_{initial} = 0$ $R_{final} \geq 30$ Home's primary heat source must be electric	$0.30/sf.	$0/sf.
Insulation - Wall	$R_{initial} = 0$ $R_{final} \geq 11$ or fill cavity Home's primary heat source must be electric	$0.40/sf.	$0/sf.
Windows	U-factor of 0.25 or lower. Home's primary heat source must be electric	$0.65/sf	$0/sf.
Deep Retrofit	Improvements to any or all of the following systems; HVAC, building shell, water heating must result in a minimum 40% decrease in energy usage. Home's primary heat source must be electric	Up to $5,000	

Notes for weatherization incentive table:

- See additional installation requirements on program website.
- Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump heating system to qualify for the electrically heated incentive.
- Home's primary heat source must be a gas heating system to qualify for the electrically cooled incentive.
- Incentives for deep retrofits apply to downstream and mid/upstream. Only one incentive will be provided per household.
- Incentives for deep retrofits may be paid to the customer, trade ally, or rater and may be split between customer, trade ally, and/or rater. The sum of the incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.

- Acronyms:
  R-Value: Thermal resistance of a material
  U-Factor: Inverse of R-value used to measure the amount of heat transmitting through a square foot of material

Table 5 – Single Family New Homes Incentives

Measure	Qualifications	Customer/ Builder Incentive	Market Partner Incentive
Performance Path	Incentives available for new electric heated or gas heated) homes that exceed the prevailing code by a minimum of 10% as modeled using program required tools and software. The home's performance must be modeled and verified by an independent third-party Rater.	Electrically heated: $1,500 Electrically heated exceeding code by 20% or more: $2,500 Compressor based electric cooling. Gas or other heating fuel. $500	

Notes for New Homes incentive table:

- See additional installation requirements on program website.
- Incentives for performance path apply to downstream and mid/upstream. Only one incentive will be provided per home. Electrically heated and non-electrically heated incentives may not be combined.
- Incentives may be paid to the customer, builder, or rater and may be split between customer, builder, and/or rater. The sum of the incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.

Table 6 – Single family water heating incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Heat Pump Water Heater	Northern Climate Specification Tier 3 and above replacing an existing electric tank type water heater	Tier 3 or higher: $600	
Low-Flow Showerheads	Flow rate ≤ 2.00 GPM		Up to $15
Low-Flow Aerators	Kitchen Aerator: Flow rate ≤ 1.50 GPM Bath Aerator: Flow rate ≤ 0.50 GPM		Up to $5

Notes for water heating table:

- Incentives for heat pump water heater measures apply to downstream, mid/upstream, and direct install. Direct install will be offered on an initiative basis and may not be available for the entire year. See program website for availability information.
- Incentives for heat pump water heaters may be paid to the customer, retailer/dealer, or manufacturer and may be split between customer retailer/dealer, and/or manufacturer. The sum of incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- Incentives for low-flow showerheads and low-flow aerators, apply to upstream, mail-by-request, and direct install. Mail-by-request and direct install will be offered on an initiative basis and may not be available for the entire year. See program website for availability information.
- See additional installation requirements on program website.
- Acronyms:
  GPM: Gallons per minute

Table 7 - Manufactured Homes Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Central Air Conditioner with Best Practice Installation and Sizing	≥15 SEER Central air conditioner must be installed and sized per program's requirements	$300	
Duct Sealing (Not Direct Install)	Home's primary heat source must be either a ducted heat pump or electric forced air furnace. Existing ducts must be unsealed. Duct sealing must be done per program's requirements	$300	
Duct Sealing (direct install)	Home's primary heat source must be either a ducted heat pump or electric forced air furnace. Existing ducts must be unsealed. Duct sealing must be done per program's requirements	$0	Up to $500
Electronic Line Voltage Thermostat	Must meet Bonneville Power Administration (BPA) specifications. Home's primary heating source must be an electric zonal heating system.	$60	
Evaporative Coolers - 2,000-3,499 CFM	2,000-3,499 CFM	$100	
Evaporative Coolers – 3,500+ CFM	Minimum 3,500 CFM (must be the primary cooling source)	$300	
Federal Standard Heat Pump Conversion with Best Practice Installation and Sizing	For replacement of existing electric furnace with new federal standard efficiency heat pump. Heat Pump must include Best Practices Installation & Proper Sizing.	$1,300	

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Central Air Conditioner with Best Practice Installation and Sizing	≥15 SEER Central air conditioner must be installed and sized per program's requirements	$300	
9.0+ HSPF Heat Pump Conversion with Best Practice Installation and Sizing	For replacement of existing electric furnace with new high efficiency heat pump. ≥ 9.0 HSPF must include Best Practices Installation & Proper Sizing.	$2,000	
Ductless Heat Pumps	≥ 9.0 HSPF	$1,300	
Heat Pump Commissioning Controls Sizing	Heat Pump must be new and commissioning, controls, and sizing be completed per program requirements	$250	
Heat Pump Upgrade with Best Practice Installation and Sizing.	≥ 9.0 HSPF/14 SEER	$300	
Insulation – Attic (R-0 to R-22)	$R_{initial} = 0$ $R_{final} \geq 22$ Homes' primary heating must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.50/sf	$0/sf.
Insulation – Attic (R-11 to R-30)	$R_{initial} \leq 11$ $R_{final} \geq 30$ Homes' primary heating must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.60/sf	$0/sf.
Insulation – Floor	$R_{initial} = 0$ $R_{final} \geq 22$ Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.30/sf	$0/sf

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Central Air Conditioner with Best Practice Installation and Sizing	≥15 SEER Central air conditioner must be installed and sized per program's requirements	$300	
New ENERGY STAR	Home must be new and have received ENERGY STAR certification.	$2,000	
New Homes, Eco-rated Homes	Home must be new and have received Eco-rated certification through NEEM.	$2,200	
Smart Thermostat	Unit must be on Energy Star Qualified Products List	$50	
Windows	U-factor of 0.25 or lower. Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify	$0.65/sf.	

Notes for manufactured homes table:

- Manufactured homes are eligible for only one duct sealing incentive. The direct install offer may not be combined with the non-direct install offer.
- Duct sealing direct install will be offered on an initiative basis and may not be available for the entire year. See program website for availability information.
- Incentives for central air conditioner, not-direct install duct sealing, electronic line voltage, evaporative cooler, ductless heat pump, heat pump, and smart thermostat measures apply to downstream and mid/upstream. Only one incentive will be provided per unit.
- Incentives for central air conditioner, not-direct install duct sealing, electronic line voltage, evaporative cooler, ductless heat pump, heat pump, and smart thermostat may be paid to the customer, dealer, manufacturer, or trade ally and may be split between customer, dealer, manufacturer, and/or trade ally. The sum of the incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- Incentives for new manufactured homes may be paid to customer, dealer/retailer, or manufacturer and the available incentive per home and may be split between customer, dealer/retailer, and/or manufacturer. The sum of incentive payments per home will not exceed the amounts listed in the table. The end use customer portion of the incentive will be clearly displayed on the web site with applicable dates. The end use customer portion of the incentive may be changed.
- See additional installation requirements on program website.
- Contractors providing the direct install duct sealing services will be reimbursed for actual job costs which may include surcharge for mileage, duct testing, and other job expenses, the total of which may not exceed the incentive. No additional costs will be billed to the customer.
- Acronyms:
  NEEM: Northwest Energy Efficient Manufactured Homes
  IECC: International Energy Conservation Code
  HSPF: Heating Seasonal Performance Factor
  R-Value: Thermal resistance of a material

U-Factor: Inverse of R-value used to measure the amount of heat transmitting through a square foot of material

Table 8 – Multifamily Homes Incentives

Measure	Qualifications	Customer Incentive	Market Partner Incentive
Evaporative Coolers -2,000-3,499 CFM	2,000-3,499 CFM	$50	
Evaporative Coolers – 3,500+ CFM	Minimum 3,500 CFM (must be the primary cooling source)	$250	
Ductless Heat Pump	≥ 9.0 HSPF, single-head or multi-head unit Home's previous primary heating source must either have been an electric forced air furnace or a zonal system.	$1,300	
Electronic Line Voltage Thermostat	Must meet Bonneville Power Administration (BPA) specifications	$60	
Insulation - Attic	$R_{initial} \leq 19$ $R_{final} \geq 49$ Homes' primary heating must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.30/sf	$0/sf.
Insulation – Floor (to R-19)	$R_{initial} = 0$ $R_{final} \geq 19$ Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.20/sf.	$0/sf
Insulation – Floor (to R-30)	$R_{initial} = 0$ $R_{final} \geq 30$ Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.	$0.30/sf.	$0/sf.
Insulation - Wall	$R_{initial} = 0$ $R_{final} \geq 11$ or fill cavity	$0.40/sf.	$0/sf.

Measure	Qualifications	Customer Incentive	Market Partner Incentive
	Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify for the electrically heated incentive.		
Windows	U-factor of 0.25 or lower. Home's primary heat source must be either a heat pump, electric forced air, zonal, or ductless heat pump system to qualify	$0.65/sf	$0/sf.

Notes for multifamily homes table:

- Incentives for electronic line voltage and ductless heat pump, heat pump measures apply to downstream and mid/upstream. Only one incentive will be provided per unit.
- Incentives for electronic line voltage and ductless heat pump may be paid to the customer, dealer, manufacturer, or trade ally and may be split between customer, dealer, manufacturer, and/or trade ally. The sum of the incentive payments per unit will clearly be displayed on the website with applicable dates. The end use portion of the incentive may be changed.
- See additional installation requirements on program website.
- Acronyms:
  HSPF: Heating Seasonal Performance Factor
  R-Value: Thermal resistance of a material
  U-Factor: Inverse of R-value used to measure the amount of heat transmitting through a square foot of material

Home Energy Reports

Years of Implementation

The Home Energy Report program was implemented in August 2012 and expanded twice, the last time in in September 2014. In 2017, the Company issued an RFP for delivery service starting in January 2018. The legacy delivery contract ended in December 2017 with approximately 33,400 customers receiving reports.

Program Description

The Home Energy Report program is designed to better inform residential customers about their energy usage by providing comparative energy usage data for similar homes located in the same geographical area. In addition, the report provides the customer with information on how to modify their energy usage. Equipped with this information, customers can modify behavior and/or make structural, equipment, lighting or appliance changes to reduce their overall electric energy consumption. Reports sent by Bidgely, the successor service provider selected through the 2017 RFP process, include and added feature; energy consumption by end use (also known as disaggregated energy consumption) in addition to whole home comparative information.

Evaluation Update

Last Evaluation Report:

Program Years	Evaluation Report Date	Completed by
2016 – 2017	May 2018	ADM

Future Evaluation Report(s):

Program Years	Evaluation Report Date	To be Completed by
2018 – 2019	By May 2020	ADM

Program Details

Bidgely analyzed consumption date for the same treatment group and control group participants from the end of 2017 and started sending reports in August 2018. Usage information for this same groups of customers was analyzed for the "dark" or hiatus period (January through August) using the same methodology employed to estimate savings persistence when reports are discontinued for a period. These savings are included in the forecasted 2018 savings and will be included in the 2018 annual report. For 2018-2019 the focus is on updated messages, including disaggregated end use savings and communication channels, not re-assigning customers into new treatment and control groups. This approach will provide insight into different messages and delivery channels and their impact on savings achieved through comparative energy use reports.

For this biennial period, the Company will continue to utilize a two year measure life for assessing cost effectiveness. The two year life aligns more closely with assumptions utilized by other Washington investor owned utilities responsible for complying with I-937.

Savings will being tracked and reported annually based on reporting from the provider. Home Energy Report savings reported against the I937 target will be first year savings and any

incremental savings in year two and both will be based on an ex-post evaluation of the program performance.

Planned Program Changes

The Company will closely track the performance of program as a successor provider is brought on board to start delivery during 2018 to insure forecasted savings are delivered and the program is cost effective.

Low Income Residential Program Details

The Company offers a Low Income Weatherization program (Schedule 114) to its income-eligible residential customers.

Low Income Weatherization (Schedule 114)

Years of Implementation

The Low Income Weatherization program has been in effect since the mid-1980's and has successfully assisted in funding the weatherization of approximately 7,700 homes in Pacific Power's Washington territory.

Program Description

Pacific Power has partnered with three local non-profit agencies, Blue Mountain Action Council in Walla Walla, Northwest Community Action Center in Toppenish and Opportunities Industrialization Center of Washington in Yakima for many years. They provide weatherization services to income qualifying households throughout our Washington service area. The leveraging of Pacific Power funding along with Washington MatchMaker Program funds allows all four agencies to provide these energy efficiency services at no cost to participating customers. The Company provides rebates to partnering agencies for 50 percent of the cost of services while MatchMaker funds are available, and covers 100 percent of costs when these state funds are depleted. Participants qualify whether they are homeowners or renters residing in single-family homes, manufactured homes or apartments. In calendar year 2017 a total of 125 homes were completed with 61 (51 percent) single family homes, 45 (36 percent) manufactured homes and 16 (13 percent) apartments.

Planned Program Changes

The Low Income Weatherization program was last revised through the submission of tariff revisions in Q1 2017. These proposed revisions were determined by the Low Income Weatherization Advisory Group and included the elimination of an annual funding cap. The changes were approved by the Commission and became effective on May 1, 2017.

Consistent with the new rules and staff direction, cost-effectiveness for the low-income weatherization program will not be assessed at a program or portfolio level. Reporting for the program will include number of residences weatherized, number of measures installed, energy savings and total expenditures.

Evaluation Update

The next program evaluation will be completed by the end of 2019.

Last Evaluation Report:

Program Years	Evaluation Report Date	Completed by
2013 – 2015	January 10, 2018	Opinion Dynamics

Future Evaluation Report(s):

Program Years	Evaluation Report Date	To be Completed by
2016 - 2018	By year-end 2019	TBD

Program Details

Details for this program are contained in the program tariff. Any changes to the details included in the program tariff must be filed and approved by the Commission prior to becoming effective.

Non-Residential Program Details

The Company offers ***watt***smart Business (Non-Residential Energy Efficiency - Schedule 140) to non-residential customers in the State of Washington. The program provides a comprehensive set of financial and service incentives to assist the Company's non-residential customers in improving the energy efficiency of their facilities.

***watt*smart Business (Schedule 140)**

Years of Implementation

The ***watt***smart Business program (Schedule 140) was created in 2014 by the consolidation of two existing programs: Energy FinAnswer and FinAnswer Express. The Energy FinAnswer program was originally implemented in the 1990s as an energy efficiency improvement financing program. The program was modified to an incentive based program under Schedule 125 in October 2000. The Small Retrofit Incentive and Retrofit Incentive (Schedules 115 and 116) were created in November 2000 and were improved and renamed FinAnswer Express (Schedule 115) in May 2004.The consolidation of the programs to ***watt***smart Business was approved with Docket UE-132083, effective January 1, 2014.

Program Description

The ***watt***smart Business program was designed to support continuing acquisition of all cost-effective conservation from business customers and help reinforce the ongoing ethos of energy efficient new construction, facility upgrades, and ongoing operations.

Prescriptive incentives ("Typical Upgrades") are offered to commercial, industrial and agricultural customers for typical lighting, HVAC, motor, building envelope, food service, appliances, irrigation, dairy/farm equipment, compressed air and other retrofits or new installations. Typical Upgrades include an expedited energy analysis and incentives based on the equipment installed $/horsepower, $/ton, etc.) or based on annual energy savings determined using a program simplified analysis tool. The program includes an incentive offer specifically for small business customers receiving electric service on Schedule 24. Participating customers utilizing an approved contractor are eligible for an enhanced incentive offer targeted at up to 80 percent of the project cost. There is also a midstream point-of-purchase delivery channel for lighting. Prescriptive incentives for this offer are referred to as Instant Incentives.

Custom incentives and analysis are offered for commercial, industrial, and agricultural customer retrofits and new construction measures that meet minimum efficiency qualifications of the prescriptive incentives, but do not have a prescriptive incentive available. The program includes a vendor neutral investment grade energy analysis and cash incentives equal to $0.15 per kWh of annual energy savings (up to 70 percent of project costs).[5] There is a cap to prevent incentives from bringing the payback for a project below one year. Custom analysis includes a post-installation verification and, if required, the program includes energy commissioning. The program provides energy project manager (EPM) co-funding to increase end user management and engineering manpower devoted to electrical energy projects/activities increasing the number of commercial and industrial projects that can be completed. EPM co-funding is performance based

[5] Note there are no incentive caps for new construction projects where energy code applies.

and contingent on customer's commitment to an energy savings goal over a prescribed timeframe; typically 12 months. Co-funding proportionate to the energy savings goal at $0.025/kWh (subject to a minimum co-funding level and salary cap). If the customer meets these verified energy savings goals on schedule, co-funding continues. If however, milestones are missed, co-funding would be suspended and/or ultimately ended and repayment of unearned co-funding would be required.

Energy Management was added to the ***watt***smart Business program in January 2014. Energy Management incentives help the Company partner with customers to ensure ongoing efficiency improvements in the operation and management of facilities and industrial processes. Energy Management is a system of practices that creates reliable and persistent electric energy savings through improved operations, maintenance and management practices at customer sites. It is designed to complement program offerings for capital improvements and the Energy Project Manager co-funding offer.

Savings are site specific and monitoring of building systems and industrial process controls is used to identify and quantify energy savings.

A financing offer was added to the program in 2017. This financing is optional and is available for customers who need additional help to fund the portion of the project cost not covered by incentives. Financing can be in the form of a capital equipment lease, tax exempt municipal lease, Energy Services Agreement, etc. The financing is offered through a third party, HBC Energy Capital.

The program is marketed primarily via Pacific Power account managers, ***watt***smart Business vendors, ***watt***smart Business consultants, and project staff. Other leads come via advertising, company newsletters, word-of-mouth, past participants returning for additional projects and a combination of other Company outreach efforts.

The ***watt***smart Business program was updated in the fourth quarter of 2018 using the program change process (including Advisory Group review and comment) described below. The changes are effective on January 1, 2019. The information provided in this business plan reflects the program offers/qualification on January 1, 2019.

Planned Program Changes

Future changes will be based on changes in Washington State Energy Code, federal standards, third party specifications, cost-effectiveness, participation and updated market information.

Evaluation Update

Last Evaluation Report:

Program Years	Evaluation Report Date	Completed by
2014-2015	May 8, 2017	The Cadmus Group

Future Evaluation Report(s):

Program Years	Evaluation Report Date	To be Completed by
2016-2017	By year-end 2018	The Cadmus Group

Program Details

General program details for this program are contained in the program tariff; additional program detail is available on the program website. Any changes to the details included in the program tariff must be filed and approved by the Commission prior to becoming effective. In addition, there are program details managed outside of the program tariff. The program tariff utilizes the modification procedure established with the approval of Advice No. 06-008[6] by the Washington Utilities and Transportation Commission. The program tariff and the text below from the Advice Letter 06-008 (Docket UE-061710), filed on November 8, 2006, describe the information that is managed outside of the tariff and the process for changes.

> Future changes in the … incentive tables and definitions would be driven by program and market data. The Company assesses program performance on an ongoing basis and would propose changes at least annually. Changes may be proposed more frequently if there is compelling market data. Similar to the filing process, the Company would present information on proposed changes to its Advisory Group and seek comments prior to making changes. Changes would be clearly posted on the program web site and e-mailed to the appropriate Commission staff person with at least 45 days advance notice.

The incentive tables, program definitions and custom incentives offered are managed outside of the program tariff on the Company website via the process described above.

The current information for the program can be found on the Company's website at www.be***watt***smart.com.

[6] The description of the process for changes was also included in the wattsmart Business program filing, Advice 13-08, filed November 12, 2013 and approved by the Commission.

Washington *watt*smart Business

Definitions

Customer: Any party who has applied for, been accepted and receives service at the real property, or is the electricity user at the real property.

Energy Efficiency Incentive: Payments of money made by Pacific Power to Owner or Customer for installation of an Energy Efficiency Measure pursuant to an acknowledged Energy Efficiency Incentive Offer Letter or approved Energy Efficiency Incentive Application.

Energy Efficiency Incentive Offer Letter: An offer made by Pacific Power and acknowledged by Owner or Customer providing for Pacific Power to furnish Energy Efficiency Incentives for an Energy Efficiency Project.

Incentive Application: An application submitted by Owner or Customer to Pacific Power for Energy Efficiency or Energy Management Incentives.

Energy Efficiency Measure (EEM): Qualifying measures are any measures which, when installed in an eligible facility, result in verifiable electric energy efficiency improvement compared to a baseline as determined by Pacific Power. The baseline will be determined with reference to existing equipment, applicable state or federal energy codes, industry standard practice and other relevant factors. Qualifying measures include Waste Heat to Power and regenerative technologies.

Energy Efficiency Measure (EEM) Cost:

- New Construction/Major Renovation: EEM Cost is the total installed cost of energy efficiency equipment or system minus the cost of the code compliance/common practice equipment or system.
- Retrofit: EEM Cost is the total installed cost of the energy efficiency equipment or modification.
- In the case of New Construction, Major Renovations, and Retrofits, EEM Costs shall mean the Owner or Customer's reasonable costs incurred (net of any discounts, rebates or incentives other than Energy Efficiency Incentives from Pacific Power, or other consideration that reduces the final actual EEM Cost incurred by the Owner or Customer) to purchase and install EEMs at the Owner's or Customer's facility. If the Owner or Customer installs the EEM then the cost of installation shall be equal to the Owner's or Customer's actual labor costs for such installation.

Energy Efficiency Project: One or more EEM(s) at a Non-residential Facility[7] with similar one year payback limitations (see below) covered by one Energy Efficiency Incentive Offer Letter.

Energy Efficiency Project Cost: The sum of EEM Costs for one or more EEM(s) with similar one year payback limitations (see below) covered by one Energy Efficiency Incentive Offer Letter.

[7] Measures at multiple Non-residential Facilities may be included in one Offer Letter for convenience; however, project incentive caps (if any) are applied per individual Non-residential Facility.

Energy Management Offer Letter: An offer made by Pacific Power and acknowledged by Owner or Customer and Pacific Power providing for Pacific Power to furnish Energy Management Incentives for an Energy Management Project.

Energy Management Incentive: Payments of money made by Pacific Power to Owner or Customer for implementation of an Energy Management Measure pursuant to an executed Energy Management Offer Letter.

Energy Management Measure (EMM): an operational improvement which, when implemented in an eligible facility, result in electric savings compared to current operations as determined by Pacific Power.

Energy Management Project: One or more EMM(s) at a Non-residential Facility covered by one Energy Management Offer Letter.

Energy Project Manager: an employee or direct contractor of the Customer who will manage electrical energy efficiency projects that deliver savings toward the Customer/Owner's energy savings goal.

Energy Project Manager Co-funding: funding towards the Energy Project Manager agreed upon full value salary that is solely attributable to electrical energy efficiency work.

Major Renovation: A change in facility use type or where the existing system will not meet Owner/Customer projected requirements within existing facility square footage.

Mixed Use: Buildings served by a residential schedule and a rate schedule listed under Washington Schedule 140 shall be eligible for services under this schedule provided the Energy Efficiency Project meets the definition of New Construction or Major Renovation.

New Construction: A newly constructed facility or newly constructed square footage added to an existing facility.

Non-residential Facility: A Customer site that is served by Pacific Power and meets the applicability requirements of Washington Schedule 140, the program tariff, on file with the Washington Utilities & Transportation Commission.

Owner: The person who has both legal and beneficial title to the real property, and is the mortgager under a duly recorded mortgage of real property, the trustor under a duly recorded deed of trust.

Retrofit: Changes, modifications or additions to systems or equipment in existing facility square footage.

Waste Heat to Power: Waste heat to power is the process of capturing heat discarded by a process (with no increase in fuel input for the process) and using that heat to generate electricity for use by the Non-residential Facility in place of electricity provided by Pacific Power.

Incentives – General Information

Incentives for measures listed in the incentive tables

Per unit incentives are listed in the program incentive tables for specific Energy Efficiency Measures (EEMs) and are subject to the incentive caps below. Incentives are subject to change and current incentives can be found at www.pacificpower.net.

Custom incentives

Energy Efficiency Measures not listed in the prescriptive incentive tables (typical upgrades) may be eligible for a Custom Energy Efficiency Incentive. Pacific Power will complete an analysis of the EEM Cost and electric energy savings and determine whether to offer a custom Energy Efficiency Incentive and the incentive amount.

Energy management incentives

Non-capital improvements to operations and maintenance within a qualifying facility may be eligible for an Energy Management Incentive. Pacific Power will partner to complete an analysis of the electric energy savings of potential energy management measures and determine whether to offer an Energy Management Incentive and the incentive amount.

Energy project manager co-funding

Pacific Power can fund an additional $0.025/per kWh of verified ***watt***smart Business energy savings, up to 100 percent of the Energy Project Manager's salary. Salary is based on a letter from the Customer/Owner's human resources or accounting department stating the base annual salary and an appropriate overhead percentage, and subject to approval by Pacific Power.

Baseline adjustments

Pacific Power may adjust baseline electric energy consumption and costs to reflect any of the following: energy codes, standard practice, changes in capacity, changes in production or facility use and equipment at the end of its useful life. Such adjustments may be made for lighting energy efficiency measures installed in new construction projects where energy code does not apply.

INCENTIVES:[8],[9]

Category		Incentive	Percent Project Cost Cap[10]	1-Year Simple Payback Cap for Projects[11]	Maximum Simple Payback Threshold for Projects[12]	Other Limitations
Prescriptive Incentives (Typical Upgrades)[13]	Lighting - Retrofit	See incentive lists	70%	Yes	Yes	See incentive lists
	Lighting - New Construction/ Major Renovation		None	No	No	
	Motors		None	No	No	
	HVAC[14]		None	No	No	
	Building Envelope		None	No	No	
	Food Service		None	No	No	
	Appliances		None	No	No	
	Office		None	No	No	
	Irrigation Pump VFD		70%	Yes	Yes	

[8] The Customer or Owner may receive only one financial incentive from Pacific Power per measure. Financial incentives include energy efficiency incentive payments and energy management payments. Energy Project Manager Co-Funding is available in addition to the project incentives.

[9] Incentives for prescriptive measures are restricted to the amounts shown on the website.

[10] All EEM Costs are subject to Pacific Power review and approval prior to making an Energy Efficiency Incentive Offer. All final EEM Costs are subject to Pacific Power review and approval prior to paying an Energy Efficiency Incentive per the terms of the Energy Efficiency Incentive Offer or approved Application. Pacific Power review and approval of EEM Costs may require additional documentation from the Customer or Owner.

[11] The 1 year simple payback cap means incentives will not be available to reduce the simple payback of a project below one year. If required, individual measure incentives will be adjusted downward pro-rata so the project has a simple payback after incentives of one year.

[12]The Maximum Simple Payback Threshold for projects is available on the Pacific Power website. For Energy Efficiency Projects where the Maximum Simple Payback Threshold applies, to be eligible for Energy Efficiency Incentives, the Energy Efficiency Project simple payback before incentives must not exceed the Maximum Simple Payback Threshold. Pacific Power may accept a project with a projected payback period in excess of the threshold if project benefits satisfy the Commission's approved cost-effectiveness test.

[13] For Rate Schedule 51, 52 and 57 Street Lighting Service, the street lighting owner (Pacific Power) is not eligible for incentives.

[14] Evaporative pre-cooler incentives are subject to the project cost cap, the one-year payback cap and the maximum simple payback threshold.

	Irrigation Water Distribution		None	No	No	
	Farm and Dairy		70%	Yes	Yes	
	Compressed Air		70%	Yes	Yes	
	Wastewater and other Refrigeration		70%	Yes	Yes	
Enhanced Incentives for Small Businesses	Lighting - Retrofit	Determined by Pacific Power with not-to-exceed amounts as shown in incentive table for this offer	80%	No	Yes	Available to all Schedule 24 customers meeting small business criteria on Pacific Power's website. Qualifying equipment must be installed by an approved contractor/vendor.
	Non-lighting		None	No	No	
Mid-market incentives		Determined by Pacific Power with not-to-exceed amounts as shown in incentive table for this offer	No	No	No	Incentives available at the point of purchase through approved distributors/retailers or via a post-purchase customer application process.
Custom Non-Lighting Incentives for qualifying measures not on the prescriptive list.[15] [16]		$0.15 per annual kWh savings	70%	Yes	Yes	N/A
Energy Management		$0.02 per kWh annual savings	N/A	No	No	N/A
Energy Project Manager Co-Funding		$0.025 per kWh annual savings	100% of salary and eligible overhead	No	No	Minimum savings goal posted on Pacific Power website

[15] Project Cost and 1-Year Simple Payback Caps and the maximum simple payback threshold do not apply to New Construction and Major Renovation projects that are subject to state energy code.

[16] Refer to the Pacific Power website for Waste Heat to Power incentive eligibility requirements.

Energy Project Manager Co-funding Incentives

Payment No.	Payment Amount	Milestone
1 - Initial payment	1/3 of funding amount* (not to exceed $25,000)	1. You select an Energy Project Manager 2. We work together on Comprehensive Plan for electric energy savings 3. You sign the Energy Project Manager Offer Letter
2 - Final payment	$0.025 per kwh of energy savings achieved, to a maximum 100 percent of approved Energy Project Manager Salary and less the initial payment	1. At the end of performance period as defined in the Energy Project Manager Offer Letter

**Funding amount is based on the lesser of (a) $0.025 per kWh or (b) the total annual cost of the Energy Project Manager (salary plus overhead).*

Lighting System Retrofits Incentive Table

Category	Eligibility Requirements		Incentive
Interior Lighting	Full Fixture Replacement	With upgrade to Advanced Controls	$0.16/kWh
		With upgrade to Basic Controls	$0.14/kWh
		Without controls upgrade	$0.12/kWh
	Fixture Retrofit Kits	With controls upgrade to Basic or Advanced Controls	$0.12/kWh
		Without controls upgrade	$0.10/kWh
	Lamp Replacement	Lamp-only Replacements	See Mid-market incentive table
	Controls-only Retrofit	Controls-only upgrade to Advanced Controls	$0.16/kWh
		Controls-only upgrade to Basic Controls	$0.12/kWh
Exterior Lighting	Full Fixture Replacement (except Street Lighting)	With upgrade to Advanced Dimming Controls	$0.10/kWh
		Without controls upgrade	$0.06/kWh
	Fixture Retrofit Kits (except Street Lighting)	With upgrade to Advanced Dimming Controls	$0.07/kWh
		Without controls upgrade	$0.05/kWh
	Lamp Replacement (except Street Lighting)	Lamp-only Replacements	See Mid-market incentive table
	Street Lighting	With upgrade to Advanced Dimming Controls	$0.07/kWh
		Without controls upgrade	$0.05/kWh
	Controls-only Retrofit	Controls-only upgrade to Advanced Dimming Controls	$0.07/kWh
Non-General Illuminance	LED Case Lighting – Refrigerated Case	LED replacing fluorescent lamp in existing refrigerated cases. LED must be listed on qualified equipment list.	$10/linear foot
	LED Case Lighting – Freezer Case		$10/linear foot
	Refrigerated Case Occupancy Sensor	Installed in existing refrigerated case with LED lighting	$1/linear foot
Custom Lighting	Custom	Not listed above	$0.05/kWh

Notes for retrofit lighting incentive table

1. To be eligible for the incentives listed, the new lighting system must use less energy than the existing lighting system replaced or the baseline lighting system as determined by Pacific Power. To be eligible for an incentive for a system with controls, the new controls must save energy relative to existing controls.
2. Incentives are capped at 70 percent of Energy Efficiency Project Costs and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy Efficiency Project Costs are subject to Pacific Power approval.
3. Incentives listed as $/kWh are per kWh annual energy savings as determined by Pacific Power.
4. Eligible retrofit lighting equipment is defined in qualified equipment lists posted on the Washington energy efficiency program section of Pacific Power's website.
5. A complete list of lighting equipment not eligible for retrofit incentives is available on the Washington energy efficiency program section of Pacific Power's website.

New Construction/Major Renovation Lighting Incentive Table

Measure	Category	Eligibility Requirements	Incentive
Interior Lighting	Lighting and Lighting Control	1. The total connected interior lighting power for New Construction/Major Renovation projects must be at least 10% lower than the interior lighting power allowance calculated under the applicable version of the State energy code. For New Construction/Major Renovation projects not included in the state energy code, the total connected lighting power must be at least 10% lower than common practice as determined by Pacific Power. 2. Energy savings is subject to approval by Pacific Power	$0.08/kWh annual energy savings
Exterior Lighting	Induction Fixture	All Wattages, New Fixtures Only	$25/Fixture
	LED Outdoor Pole/Roadway, decorative	<75W; LED must be listed on qualified equipment list	$25/Fixture
	LED Outdoor Pole/Roadway	≤200W; LED must be listed on qualified equipment list	$50/fixture
		>200W; LED must be listed on qualified equipment list	$175/fixture
	LED Canopy/Soffit	LED must be listed on qualified equipment list	$50/fixture
	LED Wall packs	<50 Watts; LED must be listed on qualified equipment list	$50/fixture
		≥50 Watts; LED must be listed on qualified equipment list	$50/fixture
	LED Flood Lights	<100 Watts; LED must be listed on qualified equipment list	$50/fixture
		≥100 Watts; LED must be listed on qualified equipment list	$100/fixture
	Custom	Not listed above	$0.08/kWh annual energy savings

Notes for New Construction/Major Renovation Lighting Incentive Table

1. Project Cost Caps of 70 percent and 1-Year Simple Payback Caps apply to New Construction and Major Renovation projects that are not subject to state energy code. The 1 year simple payback cap means incentives will not be available to reduce the simple payback of a project below one year. If required, individual measure incentives will be adjusted downward pro-rata so the project has a simple payback after incentives of one year.
2. Lighting controls required by or used to comply with the applicable version of the state energy code are not eligible for incentives.

Motor Incentives Table

Equipment Type	Size Category	Sub-Category	Minimum Efficiency Requirement	Customer Incentive
Variable-Frequency Drives (HVAC fans and pumps)	≤ 100 horsepower	HVAC fans and pumps	See Note 2	$65/horsepower
Green Motor Rewinds	≥ 15 and ≤ 5,000 hp	--	Must meet GMPG Standards	$1/horsepower (See Note 3)

Notes for other motor incentives table:

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.
2. Throttling or bypass devices, such as inlet vanes, bypass dampers, three-way valves, or throttling valves must be removed or permanently disabled to qualify for HVAC fan or pump VFD incentives. VFDs required by or used to comply with the applicable version of the energy code are not eligible for incentives. Savings will only be realized for installations where a variable load is present.
3. Green Motor Rewind motors that are installed or placed in inventory may qualify for an incentive. For Green Motor Rewinds, the participating electric motor service center is paid $2/horsepower for eligible Green Motor Rewinds. A minimum of $1/hp is paid by the service center to the Customer as a credit on the motor rewind invoice. The balance is retained by the service center.

GMPG = Green Motors Practices Group
HP = Horsepower
HVAC = Heating, Ventilating and Air Conditioning
VFD = Variable Frequency Drive

HVAC Equipment Incentive Table

			Minimum Efficiency Requirement & Customer Incentive		
Equipment Type	**Size Category**	**Sub-Category**	**$25/ton**	**$50/ton**	**$75/ton**
Unitary Commercial Air Conditioners, Air-Cooled	< 65, 000 Btu/hr (single phase)	Split system and single package	--	CEE Tier 2	CEE Advanced Tier
	All equipment sizes (three phase)	Split system and single package	--	CEE Tier 2	CEE Advanced Tier
Unitary Commercial Air Conditioners, Water Cooled	All equipment sizes	Split system and single package	CEE Tier 1	--	--
Unitary Commercial Air Conditioners, Evaporatively Cooled	All equipment sizes	Split system and single package	--	CEE Tier 1	--
Packaged Terminal Air Conditioners (PTAC)	≤ 8,000 Btu/hr	Single package	12.2 EER	--	--
	> 8,000 Btu/hr and < 10,500 Btu/hr	Single package	11.9 EER	--	--
	≥ 10,500 Btu/hr and ≤ 13,500 Btu/hr	Single package	10.7 EER	--	--
	> 13,500 Btu/hr	Single package	9.9 EER	--	--
Packaged Terminal Heat Pumps (PTHP) (Heating & Cooling Mode)	≤ 8,000 Btu/hr	Single package	--	12.2 EER and 3.4 COP	--
	> 8,000 Btu/hr and < 10,500 Btu/hr	Single package	--	11.5 EER and 3.3 COP	--
	≥ 10,500 Btu/hr and ≤ 13,500 Btu/hr	Single package	--	10.7 EER and 3.1 COP	--
	> 13,500 Btu/hr	Single package	--	9.8 EER and 3.0 COP	--
Heat Pumps, Air-Cooled (Cooling Mode)	< 65, 000 Btu/hr (single phase)	Split system and single package	--	CEE Tier 2	--
	< 65,000 Btu/hr (three phase)	Split system and single package	CEE Tier 1	CEE Tier 2	--
	≥ 65,000 Btu/hr (three phase)	Split system and single package			--
Heat Pumps, Air-Cooled (Heating Mode)	< 65, 000 Btu/hr (single phase)	Split system and single package (See note 3)	--	CEE Tier 2	--
	< 65,000 Btu/hr (three phase)	Split system and single package (See note 3)	CEE Tier 1	CEE Tier 2	--
	≥ 65,000 Btu/hr (three phase)	(See note 3)			
Heat Pumps, Water-Source (Cooling Mode)	< 135,000 Btu/hr	(See note 3)	--	CEE Tier 1	--
Heat Pumps, Water-Source (Heating Mode)	< 135,000 Btu/hr	(See note 3)	--	CEE Tier 1	--

VRF Air-Cooled Heat Pumps (Cooling Mode)	<65,000 Btu/hr	Multisplit System or Multisplit System with Heat Recovery	--	--	15 SEER and 12.5 EER
	≥65,000 Btu/hr and <135,000 Btu/hr		--	--	11.5 EER and 16 IEER
	≥135,000 Btu/hr and <240,000 Btu/hr		--	--	10.9 EER and 15.4 IEER
	>240,000 Btu/hr		--	--	9.6 EER and 14.3 IEER
VRF Air-Cooled Heat Pumps (Heating Mode) (See note 3)	<65,000 Btu/hr		--	--	8.5 HSPF
	≥65,000 Btu/hr and <135,000 Btu/hr	47°Fdb/43° wb outdoor air	--	--	3.4 COP
		17°Fdb/15° wb outdoor air	--	--	2.4 COP
	>135,000 Btu/hr	47°Fdb/43° wb outdoor air	--	--	3.2 COP
		17°Fdb/15° wb outdoor air	--	--	2.5 COP
VRF Water-Cooled Heat Pumps (Cooling Mode)	< 135,000 Btu/hr	Multisplit System or Multisplit System with Heat Recovery	--	--	CEE Tier 1
VRF Water-Cooled Heat Pumps (Heating Mode) (See note 3)	< 135,000 Btu/hr	Multisplit System or Multisplit System with Heat Recovery	--	--	CEE Tier 1
Heat Pumps, Ground-Source or Groundwater-Source (Heating & Cooling Mode)	All sizes	(See note 3)	--	ENERGY STAR Qualified	--
Ground Source or Groundwater-Source Heat Pump Loop	All sizes	Open Loop	**$25/ton**	--	--
		Closed Loop			

Notes for HVAC Equipment incentive table

1. Equipment that meets or exceeds the efficiency requirements listed for the size category in the above table may qualify for the listed incentive. Equipment must meet all listed efficiency requirements to qualify for the listed incentives.
2. PTHPs can replace electric resistive heating, which must be removed.
3. Incentives for heat pumps are available per ton of cooling capacity ONLY. No incentives are paid per ton of heating capacity. Heat Pumps must meet both the cooling mode and heating mode efficiency requirements to qualify for per ton cooling efficiency incentives.
4. Equipment size categories are specified in terms of net cooling capacity at AHRI standard conditions as determined by AHRI Standard 210/240 for units <65,000 Btu/hr, AHRI Standard 340/360 for units ≥65,000 Btu/hr, AHRI Standard 1230 for VRF systems, and AHRI Standard 310/380 for PTAC and PTHP units.
5. Ground and Water Source Heat Pumps must meet or exceed listed efficiency requirements when rated in accordance with ISO-13256-1 to qualify for the listed incentive.
6. Units rated only with an IPLV may qualify for the listed incentives if the value meets or exceeds the minimum IPLV established as part of the Consortium for Energy Efficiency Commercial Unitary Air Conditioning and Heat Pump specification effective January 16, 2009.
7. Efficiency requirements align with the Consortium for Energy Efficiency (CEE) Unitary Air-Conditioning and Heat Pump Specification for equipment with heating sections other than electric resistance. CEE minimum efficiency requirements are listed on Pacific Power's website.

AHRI = Air-Conditioning, Heating and Refrigeration Institute
CEE = Consortium for Energy Efficiency
COP = Coefficient of Performance
EER = Energy Efficiency Ratio
HSPF = Heating Seasonal Performance Factor
HVAC = Heating, Ventilation and Air-Conditioning
IEER = Integrated Energy Efficiency Ratio
IPLV = Integrated Part Load Value
PTAC = Packaged Terminal Air Conditioner
PTHP = Packaged Terminal Heat Pump
SEER = Seasonal Energy Efficiency Ratio
VRF = Variable Refrigerant Flow

Other HVAC Equipment and Controls Incentives

Equipment Type	Size Category	Sub-Category	Minimum Efficiency Requirement	Customer Incentive
Evaporative Cooling	All sizes	Direct or Indirect		$0.06/ CFM
Indirect-Direct Evaporative Cooling (IDEC)	All sizes	--	Applicable system components must exceed minimum efficiencies required by energy code	$0.15/kWh annual energy Savings (See Note 2)
Chillers	All except chillers intended for backup service only	Serving primarily occupant comfort cooling loads (no more than 20% of process cooling loads)	Must exceed minimum efficiencies required by energy code	$0.15/kWh annual energy Savings (See Note 3)
365/366 day Programmable or Occupancy-based Thermostat	All sizes in portable classrooms with mechanical cooling	Must be installed in portable classroom unoccupied during summer months	365/366 day thermostatic or occupancy based setback capability	$150/thermostat
Occupancy Based PTHP/PTAC control (Retrofit only)	All sizes with no prior occupancy based control	--	See Note 4	$50/controller
Evaporative Pre-cooler (Retrofit Only)		For single air-cooled packaged rooftop or	Minimum performance efficiency of 75%. Must have enthalpy controls to control	$75/ton of attached cooling capacity

		matched split system condensers only.	pre-cooler operation. Water supply must have chemical or mechanical water treatment.	(See Note 5)
Advanced Rooftop Unit Control	≥ 5 tons and ≤ 10 tons	Must be installed on existing unitary packaged rooftop units (no split-systems), ≥ 5 tons nominal cooling capacity with constant speed supply fans.	Controls must include: - Either a supply fan VFD or multi-speed supply fan motor with controller that meets ventilation and space conditioning needs - Digital, integrated economizer control	$2,000
	> 10 tons and ≤ 15 tons			$2,800
	> 15 tons and ≤ 20 tons			$4,000
	> 20 tons			$4,500
Smart Thermostat	Residential (used in a business)		See Home Energy Savings program	

Notes for other HVAC equipment and controls incentive table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.
2. Incentives are paid at $0.15/kWh annual energy savings. IDEC energy savings subject to approval by Pacific Power.
3. Incentives are paid at $0.15/kWh annual energy savings. Chiller energy savings subject to approval by Pacific Power.

4. Controller units must include an occupancy based control and include the capability to set back the zone temperature during extended unoccupied periods and set up the temperature once the zone is occupied.

5. Incentives for Evaporative Pre-coolers are capped at 70 percent of Energy Efficiency Project Costs and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy Efficiency Project Costs are subject to Pacific Power approval. Evaporative pre-cooler incentives are subject to the maximum simple payback threshold.

CFM = Cubic Feet per Minute
IDEC = Indirect Direct Evaporative Cooling
PTHP = Packaged Terminal Heat Pump
PTAC = Packaged Terminal Air Conditioner

Building Envelope (Retrofit) Incentives

Equipment Type	Category	Minimum Efficiency Requirement	Customer Incentive
Cool Roof	--	ENERGY STAR Qualified	$0.05/square foot
Roof/Attic Insulation	--	Minimum increment of R-10 insulation	$0.08/square foot
Wall Insulation	--	Minimum increment of R-10 insulation	$0.10/square foot
Windows (See Note 3, 4)	Site-Built	U-Factor ≤ 0.30 and SHGC ≤ 0.33 (Glazing Only Rating)	$0.34/square foot
	Assembly	U-Factor ≤ 0.30 and SHGC ≤ 0.33 (Entire Window Assembly Rating)	$0.34/square foot
Window Film	Existing Windows	See Note 5	$0. 15/kWh annual energy savings (See Note 5)

Notes for retrofit building envelope incentive table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.
2. Building must be conditioned with mechanical cooling to be eligible for envelope incentives.
3. Energy performance of window assemblies and glazing products must be rated in accordance with NFRC. Site-Built metal window systems must include a thermal break within the frame or other appropriate NFRC certification to qualify for incentives. Skylights are not eligible to receive incentives.
4. Window square footage is determined by the dimensions of the entire window assembly, not just the window glass.
5. Incentives for window film are calculated based on film specifications and window orientation at $0.15/kWh annual energy savings. Energy savings subject to approval by Pacific Power.

NFRC = National Fenestration Rating Council
SHGC = Solar Heat Gain Coefficient

Building Envelope (New Construction/Major Renovation) Incentives

Equipment Type	Category	Minimum Efficiency Requirement	Customer Incentive
Windows (See Note 3, 4)	Site-Built	U-Factor ≤ 0.30 and SHGC ≤ 0.33 (Glazing Only Rating)	$0.34/square foot
	Assembly	U-Factor ≤ 0.30 and SHGC ≤ 0.33 (Entire Window Assembly Rating)	$0.34/square foot

Notes for building envelope (new construction/major renovation) incentives table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.
2. Building must be conditioned with mechanical cooling to be eligible for envelope incentives.
3. Window square footage is determined by the dimensions of the entire window assembly, not just the window glass.
4. Energy performance of window assemblies and glazing products must be rated in accordance with NFRC. Site-Built metal window systems must include a thermal break within the frame or other appropriate NFRC certification to qualify for incentives. Skylights are not eligible to receive incentives.

NFRC = National Fenestration Rating Council
SHGC = Solar Heat Gain Coefficient

Food Service Equipment Incentives

Equipment Type	Equipment Category	Minimum Efficiency Requirement	Customer Incentive
Commercial Dishwasher (High Temperature models w/ electric boosters Only)	Undercounter	ENERGY STAR Qualified	$100
	Stationary Rack, Single Tank, Door Type		$400
	Single Tank Conveyor		$1,000
	Multiple Tank Conveyor		$500
Electric Insulated Holding Cabinet	Full Size	ENERGY STAR Qualified	$700
	3/4 Size		$300
	1/2 Size		$200
Electric Steam Cooker	3-, 4-, 5- and 6-pan or larger sizes – Tier 2	ENERGY STAR Qualified w/ Heavy Load Efficiency ≥ 68%	$300
Electric Convection Oven	Full Size	ENERGY STAR Qualified	$200
Electric Griddle	--	ENERGY STAR Tier 2 Qualified	$150
Electric Combination Oven	6-15 pans	ENERGY STAR Qualified	$1,000
	16-20 pans	ENERGY STAR Qualified	$275
Ice Machines (Air-Cooled Only)	Tier 1: Harvest Rate <500 lbs/day	ENERGY STAR Qualified	$125
	Tier 1: Harvest Rate ≥ 500 lbs/day	ENERGY STAR Qualified	$150
	Tier 2: Harvest Rate <500 lbs/day	CEE Tier 2 Qualified	$250
	Tier 2: Harvest Rate ≥ 500 lbs/day	CEE Tier 2 Qualified	$400
Demand Controlled Kitchen Ventilation Exhaust Hood (Retrofit Only)	Must be installed on commercial kitchen exhaust system.	Variable speed motors must be controlled to vary fan speed depending upon kitchen demand, as indicated by connected sensors.	$0.15/kWh annual energy savings (See note 2)
Anti-Sweat Heater Controls (Retrofit Only)	Low-Temp (Freezing) Cases	Technologies that reduce energy consumption of anti-sweat heaters based on sensing humidity.	$20/linear foot (case length)
	Med-Temp (Refrigerated) Cases		$16/linear foot (case length)

Notes for food service equipment incentives table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.

2. Incentives are paid at $0.15/kWh annual energy savings. Demand controlled kitchen ventilation exhaust hood energy savings subject to approval by Pacific Power.

CEE = Consortium for Energy Efficiency

Appliances Incentive Table

Equipment Type	Equipment Category	Minimum Efficiency Requirement	Customer Incentive
High-Efficiency Clothes Washer	Residential (used in a business)	See Home Energy Savings program	
	Commercial (must have electric water heating and/or electric clothes dryer)	ENERGY STAR® Qualified	$100
Heat Pump Water Heater	Residential (used in a business)	See Home Energy Savings program	
Heat Pump Clothes Dryer	Residential (used in a business)	See Home Energy Savings program	
Hybrid Heat Pump Clothes Dryer	Residential (used in a business)	See Home Energy Savings program	

Notes for appliances incentive table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.
2. Equipment must meet the efficiency rating standard that is in effect on the date of purchase.
3. Refer to Pacific Power's Home Energy Savings program for efficiency requirements and incentives for listed residential appliances used in a business.

Incentives for Office Energy Efficiency Measures

Equipment Type	Replace	Minimum Efficiency Requirements	Customer Incentive
Smart Plug Strip	--	1. Incentive applies to any plug strip that eliminates idle or stand-by power consumption of connected plug-load appliance through the use of an occupancy sensor, electric load sensor, or timer. 2. Applies only to electric plug-load applications (e.g. computer monitors, desk lamps, etc.)	$15/qualifying unit

Notes for office energy efficiency measures incentives table

1. Equipment that meets or exceeds the efficiency requirements listed for the equipment category in the above table may qualify for the listed incentive.

Irrigation Incentives for Wheel Line, Hand Line, or Other Portable Water Distribution Systems (Retrofit Only)

Irrigation Measure	Replace	With	Limitations	Customer Incentive
New rotating, sprinkler replacing worn or leaking impact or rotating sprinkler	Leaking or malfunctioning impact rotating sprinkler	Rotating sprinkler	1. Fixed-in-place (solid set) systems not eligible. 2. Incentive limited to two sprinklers per irrigated acre.	$3 each
New impact sprinkler replacing worn or leaking impact sprinkler	Leaking or malfunctioning impact sprinkler	New impact sprinkler	1. New nozzle shall be included in new sprinkler. 2. Fixed-in-place (solid set) systems not eligible. 3. Incentive limited to two sprinklers per irrigated acre.	$3 each
New nozzle replacing worn nozzle of same design flow or less on existing sprinkler	Worn nozzle	New nozzle (including flow control nozzles) of same design flow or less	1. Flow rate shall not be increased. 2. Fixed-in-place (solid set) systems not eligible. 3. Incentive limited to two nozzles per irrigated acre.	$0.50 each
New gasket replacing leaking gasket, including mainline valve or section gasket, seal, or riser cap (dome disc)	Leaking gasket	New gasket, including mainline valve or section gasket, seal, or riser cap (dome disc)	1. New gasket must replace leaking gasket. 2. Fixed-in-place (solid set) systems not eligible. 3. Incentive limited to two gaskets per irrigated acre.	$2 each
New drain replacing leaking drain	Leaking drain	New drain, including drains on pivots and linears	1. New drain must replace leaking drain. 2. Fixed-in-place (solid set) systems not eligible. 3. Incentive limited to two drains per irrigated acre.	$2 each
Cut and press or weld repair of leaking wheel line, hand line, or portable main line	Leak in wheel line, hand line, or portable main line	Cut and pipe press or weld repair	Invoice must show number of leaks repaired	$10/repair
New or rebuilt wheel line leveler replacing leaking or malfunctioning leveler	Replace leaking or malfunctioning leveler	New or rebuilt leveler	1. Applies to leaking or malfunctioning levelers only. 2. For rebuilds, invoice must show number of rebuild kits purchased and installed.	$3 each

Irrigation Incentives for Pivot and Linear Water Distribution Systems (Retrofit Only)

Irrigation Measure	Replace	With	Limitations	Customer Incentive
Low pressure sprinkler (e.g. rotating, wobbling, multi-trajectory spray) replacing impact sprinkler	Impact sprinkler	New low pressure sprinkler (on-board nozzle is considered part of sprinkler, not a separate item with additional incentive)	New sprinkler is of same design flow or less	$3 each
Low pressure sprinkler (e.g. rotating, wobbling, multi-trajectory spray) replacing worn low pressure sprinkler	Worn low pressure sprinkler (e.g. rotating, wobbling, multi-trajectory spray)	New low pressure sprinkler (on-board nozzle is considered part of sprinkler, not a separate item with additional incentive)	1. New sprinkler is of same design flow or less.	$1.50 each
Pressure regulator	Worn pressure regulator. May also add regulator where there had been none before.	New pressure regulator of same design pressure or less.	1. New regulator must be of same design pressure or less	$3 each

Irrigation Incentives for Any Type of System (Retrofit or New Construction, Including Non-agricultural Irrigation Applications)

Irrigation Measure	Replace	With	Limitations	Customer Incentive
Irrigation pump VFD		Add variable frequency drive to existing or new irrigation pump	1. Pumps serving any type of irrigation water transport or distribution system are eligible – wheel lines, hand lines, pivots, linears, fixed-in-place (solid set). 2. Both retrofit and new construction projects are eligible. 3. Incentives are capped at 70 percent of Energy Efficiency Project Costs, and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy savings and Energy Efficiency Project Costs are subject to Pacific Power approval.	$0.15/kWh annual savings

Notes for irrigation incentive tables

1. Equipment that meets or exceeds the requirements above may qualify for the listed incentive.
2. Except for the pump VFD measure, incentives listed here are available only for retrofit projects where new equipment replaces existing equipment (i.e. new construction is not eligible).
3 Except for the pump VFD measure, equipment installed in fixed-in-place (solid set) systems is not eligible. Incentive is limited to two units per irrigated acre.

VFD = Variable Frequency Drive

Farm and Dairy Incentives

Equipment Type	Equipment Category	Minimum Efficiency Requirements	Customer Incentive
Automatic Milker Takeoffs (Retrofit Only)	--	Equipment must be able to sense milk flow and remove milker when flow reaches a pre-set level. The vacuum pump serving the affected milking units must be equipped with a VFD. Incentive is available for adding automatic milker takeoffs to existing milking systems, not for takeoffs on a brand new system where there was none before. Replacement of existing automatic milker takeoffs is not eligible for this listed incentive, but may qualify for a Custom Energy Efficiency Incentive.	$235 each
Agricultural Engine Block Heater Timers	--	Timer must be a UL-listed device and rated for a minimum of 15 amps continuous duty.	$10 each
High Efficiency Circulating Fans (See Note 2)	12-23" Diameter	Fan must achieve an efficiency level of 11 cfm/W	$25/fan
	24-35" Diameter	Fan must achieve an efficiency level of 18 cfm/W	$35/fan
	36-47" Diameter	Fan must achieve an efficiency level of 18 cfm/W	$50/fan
	≥48" Diameter	Fan must achieve an efficiency level of 25 cfm/W	$75/fan
Heat Recovery	--	Heat recovery unit must use heat rejected from milk cooling refrigeration system to heat water. Customer must use electricity for water heating.	$0.15/kWh annual energy savings
High-efficiency Ventilation Fans (See Note 2)	12-23" Diameter	Fan must achieve an efficiency level of 11 cfm/W	$45/fan
	24-35" Diameter	Fan must achieve an efficiency level of 13 cfm/W	$75/fan
	36-47" Diameter	Fan must achieve an efficiency level of 17 cfm/W	$125/fan
	≥48" Diameter	Fan must achieve an efficiency level of 19.5 cfm/W	$150/fan
Milk Pre-coolers (Retrofit Only)	--	The equipment must cool milk with well-water before it reaches the bulk cooling tank.	$0.15/kWh annual energy savings
Programmable Ventilation Controllers	--	Controller must control ventilation fans based on temperature or other applicable factors such as humidity, odor concentration, etc...	$20/fan controlled
Variable Frequency Drives for Dairy Vacuum Pumps (Retrofit Only)	--	VFD must vary motor speed based on target vacuum level. Incentive available for retrofit only (i.e. new construction and replacement of existing VFD not eligible.).	$165/hp

Potato or Onion Storage Fan VFD	--	Add variable frequency drive to existing or new fan in potato or onion storage	$175/hp

Notes for farm and dairy incentives table

1. Equipment that meets or exceeds the efficiency requirements above may qualify for the listed incentive.
2. Fan performance must be rated by an independent testing body in accordance with the appropriate ANSI/AMCA standards.
3. Incentives are capped at 70 percent of Energy Efficiency Project Costs and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy savings and Energy Efficiency Project Costs are subject to Pacific Power approval.4. Except where noted, all equipment listed in the table is eligible for incentives in both new construction and retrofit projects.

AMCA = Air Movement and Control Association International, Inc.
ANSI = American National Standards Institute
VFD = Variable Frequency Drive
cfm = cubic feet per minute
W = watt

Compressed Air Incentives

Equipment Category	Replace	With	Limitations	Customer Incentive
Receiver Capacity Addition	Limited or no receiver capacity (≤ 2 gallons per scfm of trim compressor capacity)	Total receiver capacity after addition must be > 2 gallons per scfm of trim compressor capacity	1. Compressor system size ≤ 75 horsepower, not counting backup compressor(s). 2. Trim compressor must use load/unload control, not inlet modulation or on/off control. 3. Systems with VFD compressor or using variable displacement compressor are not eligible.	$3/gallon above 2 gallons per scfm
Cycling Refrigerated Dryers	Non-cycling refrigerated dryer	Cycling refrigerated dryer	1. Rated dryer capacity must be ≤ 500 scfm 2. Dryer must operate exclusively in cycling mode and cannot be equipped with the ability to select between cycling and non-cycling mode. 3. Refrigeration compressor must cycle off during periods of reduced demand	$2/scfm
VFD Controlled Compressor	Fixed speed compressor	≤ 75 hp VFD controlled oil-injected screw compressor operating in system with total compressor capacity ≤ 75 hp, not counting backup compressor capacity	1. Total compressor capacity in upgraded system is ≤ 75 hp, not counting backup compressor capacity. 2. Compressor must adjust speed as primary means of capacity control	$0.15/kWh annual energy savings
Zero Loss Condensate Drains	Timer drain	Zero loss condensate drain (See Note 4)	Drain is designed to function without release of compressed air into the atmosphere. Any size system is eligible – there is no restriction on compressor size.	$100 each
Outside Air Intake	Compressor intake drawing air from compressor room	≤ 75 hp compressor where permanent ductwork between compressor air intake and outdoors	Ductwork must meet manufacturer's specifications, which may include: (a) ≤ 0.25" W.C. pressure loss at rated flow, and (b) allow use of compressor room air during extremely cold outside air conditions	$6/hp

Notes for compressed air incentive table

1. Equipment that meets or exceeds the efficiency requirements above may qualify for the listed incentive.
2. Except for the zero loss condensate drain measure, eligibility for incentives is limited to compressed air systems with total compressor capacity of 75 hp or less, not including backup compressor capacity that does not normally run.
3. Incentives are capped at 70 percent of Energy Efficiency Project Costs and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy savings and Energy Efficiency Project Costs are subject to Pacific Power approval.
4. Zero Loss Condensate Drains purchased as an integral part of another measure are eligible for the incentive shown above.

hp = horsepower
PPM = parts per million
PSI = pounds per square inch
scfm = cubic feet of air per minute at standard conditions (14.5 psia, 68°F, and 0 percent relative humidity)
VFD = Variable Frequency Drive

Incentives for Wastewater and other Refrigeration Energy Efficiency Measures

Equipment Type	Replace	With	Customer Incentive
Adaptive refrigeration control	Conventional controls (defrost timeclock, space thermostat, evaporator fan control, if any, thermal expansion valve in some instances)	Adaptive refrigeration controller and, in some instances, electric expansion valve	$0.15/kWh annual energy savings
Fast acting door	Manually operated door, automatic door with long cycle time, strip curtain, or entryway with no door in refrigerated/conditioned space	Fast acting door	$0.15/kWh annual energy savings
Wastewater – low power mixer	Excess aeration capacity	Extended range circulator	$0.15/kWh annual energy savings

Notes for other energy efficiency measures incentives table:

1. Equipment that meets or exceeds the efficiency requirements above may qualify for the listed incentive.
2. Incentives are capped at 70 percent of Energy Efficiency Project Costs and incentives will not be available to reduce the Energy Efficiency Project simple payback below one year. Energy savings and Energy Efficiency Project Costs are subject to Pacific Power approval.

Enhanced Incentives for Small Businesses – Lighting (Retrofit only)[17]

Measure	Category	Eligibility Requirements	Customer Incentive
LED**	2x4 Troffer Retrofit to TLED (Lo-W) 2-lamp	Tubular LED lamps with electronic ballast replacement or LED driver (external or internal). Lamp wattage reduction ≥ 10 Watts.	$52/Fixture
	2x4 Troffer Retrofit to TLED (Hi-W) 2-lamp		$64/Fixture
	2x4 Troffer Retrofit to TLED (Lo-W) 4-lamp		$72/Fixture
	2x4 Troffer Retrofit to TLED (Hi-W) 4-lamp		$76/Fixture
	2x2 Troffer Retrofit to TLED		$76/Fixture
	2x4 Troffer Volumetric Kit (Lo-W)	LED volumetric kit, 2x4 or 2x2 troffer retrofit	$120/Fixture
	2x4 Troffer Volumetric Kit (Hi-W)		$136/Fixture
	2x2 Troffer Volumetric Kit		$96/Fixture
	2x4 Troffer Flat Panel Kit (Lo-W)	LED flat panel fixture/kit, 2x4 or 2x2 troffer retrofit or replacement	$96/Fixture
	2x4 Troffer Flat Panel Kit (Hi-W)		$120/Fixture
	2x2 Troffer Flat Panel Kit (Hi-W)		$64/Fixture

**All LED equipment must be listed on qualified equipment list available on the Pacific Power website.
[10]Incentives for measures in this table are available only to Small Business customers as defined in the INCENTIVES table.

	Industrial Strip Kit w/ TLED (Lo-W) 2-lamp	(1) 8' T12 to (2) 4' Tubular LED lamps and electronic ballast replacement or driver and retrofit kit.	$84/Fixture
	Industrial Strip Kit w/ TLED (Hi-W) 2-lamp		$92/Fixture
	Industrial Strip Kit w/ TLED (Lo-W) 4-lamp		$104/Fixture
	Industrial Strip Kit w/ TLED (Hi-W) 4-lamp		$104/Fixture
	LED High Bay/Low Bay Fixture (Lo-W)	Must replace incandescent or HID	$120/Fixture
	LED High Bay/Low Bay Fixture (Hi-W)		$160/Fixture
	LED Wall Pack Fixture (Lo-W)		$80/Fixture
	LED Wall Pack Fixture (Hi-W)		$140/Fixture
Lighting Control	Occupancy Sensor Retrofit	PIR, Dual Tech, or Integral Sensor	$0.30/Watt controlled

Notes for enhanced incentives for small businesses – Lighting table:

1. To be eligible for the incentives listed, the new lighting system must use less energy than the existing lighting system replaced or the baseline lighting system as determined by Pacific Power.
2. Incentives are capped at 80 percent of Energy Efficiency Project Costs. Energy Efficiency Project Costs and energy savings are subject to Pacific Power approval.
3. Qualified equipment lists are posted on the Washington energy efficiency program section of Pacific Power's website.
4. Low and high wattage ranges are posted on the Washington energy efficiency program section of Pacific Power's website.
5. Watt controlled refers to the total wattage of lighting fixtures down circuit from the control.

Lo-W – Low wattage
Hi-W – High wattage

Enhanced Incentives for Small Businesses – Non-Lighting (Retrofit only)

Measure	Category	Eligibility Requirements	Maximum Customer Incentive
Thermostat Reprogramming	--	For existing programmable thermostats with daily setback control capability	Up to $40/thermostat
Smart Plug Strips	--	1. Incentive applies to any plug strip that eliminates idle or stand-by power consumption of connected plug-load appliance through the use of an occupancy sensor, electric load sensor, or timer. 2. Applies only to electric plug-load applications with at least 1 device controlled by power strip.	Up to $50/qualifying unit

Notes for enhanced incentives for small businesses – Non-Lighting table:

1. Incentives for measures in this table are available only to Small Business customers as defined in the INCENTIVES table.

2. The incentives listed in this table are "up to" incentives. Actual incentives will be determined by Pacific Power on a component level basis, will not exceed the values in this table, will be posted on the Pacific Power website, and are subject to change with 45 days notice.

3. To be eligible for the incentives listed above, thermostat reprogramming and smart plug strip installation must be performed by an approved contractor.

Mid-Market Incentives[18]

Measure	Category	Eligibility Requirements	Maximum Incentive[19]
LED	A-19 Lamp < 8 W, Medium Base*	LED must be listed on qualified equipment list	Up to $5/Lamp
	A-19 Lamp ≥ 8 W, Medium Base*	LED must be listed on qualified equipment list	Up to $5/Lamp
	A-21 Lamp ≥ 12 W, Medium Base*	LED must be listed on qualified equipment list	Up to $10/Lamp
	PAR Reflector Lamp*	LED must be listed on qualified equipment list	Up to $15/Lamp
	BR Reflector Lamp*	LED must be listed on qualified equipment list	Up to $13/Lamp
	MR16 Reflector Lamp	LED must be listed on qualified equipment list	Up to $10/Lamp
	PLC Pin-based Lamp <10 W	LED must be listed on qualified equipment list	Up to $10/Lamp
	PLC Pin-based Lamp ≥ 10 W	LED must be listed on qualified equipment list	Up to $15/Lamp
	PLL Pin-based Lamp	LED must be listed on qualified equipment list	Up to $15/Lamp
	Decorative Lamp*	LED must be listed on qualified equipment list	Up to $10/Lamp
	Recessed Downlight Kit	LED must be listed on qualified equipment list	Up to $15/Fixture
	T8 TLED Lamp – Type A, A/B Dual Mode	LED must be listed on qualified equipment list	Up to $10/Lamp
	T8 TLED Lamp – Type B	LED must be listed on qualified equipment list	Up to $15/Lamp
	T8 TLED Lamp – Type C	LED must be listed on qualified equipment list	Up to $25/Lamp
	T5 TLED Lamp	LED must be listed on qualified equipment list	Up to $15/Lamp
	HID Replacement Lamp <40 W	LED must be listed on qualified equipment list	Up to $50/Lamp
	HID Replacement Lamp ≥40 and < 80 W	LED must be listed on qualified equipment list	Up to $70/Lamp
	HID Replacement Lamp ≥80 and < 150 W	LED must be listed on qualified equipment list	Up to $90/Lamp
	HID Replacement Lamp ≥150W	LED must be listed on qualified equipment list	Up to $110/Lamp
	Wall Pack Fixture	LED must be listed on qualified equipment list	Up to $30/Fixture
	Wall Pack Fixture with Occupancy Sensor	LED must be listed on qualified equipment list	Up to $75/Fixture

Notes for mid-market incentives:

[18] Incentives for measures in this table are available through Pacific Power-approved retailers/distributors or a customer application process.

[19] Actual incentives will be posted on Pacific Power's website and subject to change with 45 days' notice. Change notices will be prominently displayed on program website and communicated to participating retailers/distributors and Trade Allies.

1. Incentives are capped at 70 percent of qualifying equipment costs. Qualifying equipment costs are subject to Pacific Power approval.
2. Qualified equipment lists referenced in the above table are posted on the Washington energy efficiency program section of Pacific Power's website.

* Incentives for listed general service lamps (as defined by the Federal Code of Regulations) will not be available after December 31, 2019.

A = Arbitrary (standard lamp shape)
PAR = Parabolic Aluminized Reflector
BR = Bulged Reflector
HID = High Intensity Discharge (e.g. high pressure sodium, metal halide)
HO = High Output
MR = Mirrored Reflector
PLC = Pin Lamp Compact Fluorescent
PLL = Pin Lamp Long Compact Fluorescent
TLED = Tubular Light Emitting Diode
W = Watt

Other Programs & Initiatives

This section of the business plan includes information on the Company's Energy Education in Schools program, a general "education only" program; NEEA, an external group partly funded through Company dollars; and Production Efficiency, energy efficiency improvements at Company owned non-hydro generation facilities serving the Company's Washington territory.

Energy Education in Schools

Years of Implementation

This "education only" program replaced the previous "education and savings" program which ran from April 2003 through June 2012. The program, Be ***watt***smart, Begin at Home, was implemented with school presentations beginning in February 2013 (See "Year One Timeline" below under "Program Details"). Program costs are reflected in Tables 1, 2 and 3 of this report.

Program Description

The Company has contracted with the National Energy Foundation (NEF) to implement the Be ***wattsmart***, Begin at Home program in schools during the 2015-16, 2016-17, and 2017-18 school years.

Program costs fall under Paragraph (7) (d) in Order 01 of Docket UE-132047, Conservation Efforts without Approved EM&V Protocol, where the Company can spend up to ten (10) percent of its conservation budget on programs whose savings impact has not yet been measured provided the overall portfolio of programs still pass the Total Resource Cost as described in Paragraph (10) (a) of the same Order 01.

NEF is a non-profit corporation with nearly 40 years providing energy education and awareness. The mission of NEF is to "cultivate and promote an energy literate society".

Program Changes

The Company's contract with National Energy Foundation (NEF) concludes with the Fall 2017 school assembly presentations and the delivery of final reports in early 2018. In order to continue the education program for the 2018/2019 school year, the Company will issue a competitive RFP in early 2018. There are no plans at this time to change the fundamentals of the education program. The budget provided in Table 1 is based on the current contract. Changes in costs based on the successor contract will be included in the next business plan update.

Evaluation Information

As this is an "education only" initiative, no third-party impact evaluation is anticipated beyond verification that the program is being delivered as reported. See "household audits cards" in "Program Details" section below.

Program Details

The centerpiece of the program is a series of 45 to 60 minute 5th grade appropriate presentations to educate students on core electricity components and efficient use, including the importance of energy efficiency and how students can become more energy efficient. The targeted grade levels are 4th and 5th grade based on curriculum correlations with the Washington Office of Superintendent of Public Instruction Learning Standards. The school visit includes a custom designed presentation and hands-on group activities. Teachers receive a packet of instructional materials in advance of the school presentations to assist with the energy literacy education.

The school presentations are designed to get students "thinking" about energy and energy efficiency. In addition, an integrated follow-up to the school presentations will be provided through a home audit and household audit activity that is intended to provide students and their parents with an opportunity to "act" on the information they have learned. Students are provided informational booklets and a household audit activity to fill out regarding the energy use and energy efficiency topics they were taught. Students return the household audit report to their teachers, who in turn submit them to NEF. NEF provides teachers with an incentive for collecting the household audit cards. Each teacher returning at least 80 percent of their students' completed household audit cards receive a $50 mini-grant. Those returning 50-79 percent of the household audit cards receive a $25 mini-grant. The data is summarized and reported to determine energy efficiency behavioral data and other program participation information.

Program Metrics per Year

Total number of schools:	approximately 47
Total number of students:	approximately 4,000
Percent of eligible schools reached:	approximately 80 percent
Total teachers	approximately 157
Target return rate - Home Energy Checklists	approximately 65 percent

Anticipated Outcomes

- Teachers, students, and families become more energy literate, particularly in the understanding of energy efficiency.
- Teachers, students, and families learn to become responsible energy stewards for the future of their community and state.
- Teachers, students, and families make a commitment to use energy more wisely at home, at school, at work, and in the community.
- Teachers, students and families will have a greater awareness of what it means to be ***watt***smart, and the resources available to them.
- A culture of energy efficiency will be developed among teachers, students, and families.
- Families will become more aware and motivated to take advantage of energy efficiency programs provided by the Company.
- Data will be gathered, analyzed, summarized, and reported regarding student sharing of energy efficiency messages with their family, home energy use, energy efficiency practices, and how the program is achieving its anticipated outcomes.

Northwest Energy Efficiency Alliance

Years of Implementation
NEEA has been serving the Northwest region of Oregon, Washington, Idaho, and Montana since 1997.

Program Description
NEEA is a non-profit corporation supported by, and working in collaboration with, the Bonneville Power Administration, Energy Trust of Oregon and more than 100 Northwest utilities including Pacific Power.

Program Details
NEEA works in collaboration with its funders and other strategic market partners to accelerate the innovation and adoption of energy-efficient products, services, and practices.

Costs includes both Pacific Power's direct funding of NEEA and the Company's internal management costs. NEEA 2018 and 2019 forecasted expenditures are based on Pacific Power's share (2.554 percent) of the estimated annual costs provided in NEEA's 2015-2019 Business Plan approved in June 2014. The 2018-2019 biennial electric savings forecast was provided by NEEA and includes savings above the Council's 7th power plan baseline and excludes the estimate from savings from local programs including those operated by Pacific Power and the rest of the region's utilities/program administrators. Savings from NEEA's trackable measures category are not included in this forecast.

Appendix A of NEEA's 2015 Annual Savings Report explains how NEEA's savings are calculated (and not double-counted with utility program savings). See pp 133-134. Appendix A can be found on NEEA's Cost Effectiveness Advisory Committee's Conduit page
https://conduitnw.org/Pages/File.aspx?rid=3712

See Appendix 9 to the Biennial Conservation Plan for more detail on NEEA's forecast and savings calculation methodology and Pacific Power's regional savings share. See the Biennial 2018-2019 Conservation Target section of the Biennial Conservation Plan for Pacific Power treatment of NEEA savings consistent with the order 03 received in docket UE-100170.

In summary NEEA's plan to accomplish this goal includes:

- Building and leveraging relationships to influence the market.
- Designing and executing strategic market interventions to expand the availability and demand for energy efficient products, services and practices.
- Identifying, developing and advancing emerging opportunities to fill the pipeline for energy efficiency.
- Delivering education and training to expand market capacity to deliver and maintain energy-efficient products, services and practices.
- Facilitating regional coordination, collaboration and knowledge sharing to align interests and accelerate energy efficiency efforts.
- Demonstrating and promoting the value of energy efficiency to increase demand.

- Developing market intelligence and resources to help NEEA partners achieve their goals.
- Advancing the adoption and implementation of increasingly efficient energy codes and standards to lock in long-term savings.

NEEA's initiatives are outlined in the and 2015-2019 Business and Strategic Plans and annual reports. More information on NEEA's initiatives and business and strategic plans can be found at the following on the NEEA website:

- Initiatives: http://neea.org/initiatives

- Business Plans:
  - 2015-2019 http://neea.org/docs/default-source/default-document-library/neea-2015-19-business-plan---board-approved.pdf?sfvrsn=2

- Strategic Plans:
  - 2015-2019 http://neea.org/docs/default-source/default-document-library/neea-2015-2019-strategic-plan-board-approved.pdf?sfvrsn=2

Customer Outreach and Communications

Years of Implementation

In 2011, the Company implemented ***watts***mart, the demand-side management communication and outreach campaign. The ***watt***smart program was put into action to meet the program design principle conditions of Order 02 in Docket UE-100170 specific to energy efficiency program outreach.

Program Description

The conditions for outreach for programs required Pacific Power to establish a strategy for informing participants about program opportunities. The ***watt***smart communications campaign was designed to create awareness of the importance of being energy efficient, and to help increase participation in the Company's demand-side management programs. The programs are funded through the system benefit charge adjustment (Schedule 191) collected on customer bills.

Program Details

Provided in the table below is a summary of the media channels that were used to deliver the ***watt***smart campaign in 2018.

Communication Channel	Value to Communication Portfolio
Television	Advertisements targeting both residential and business customers were featured throughout the year. TV spots ran in February, March, April, May, June, July, September, November and December in 2018. Stations on which campaign spots aired include: KAPP (ABC), KCYU (FOX), KIMA (CBS), KNDO (NBC), KUNW (UNIV) and Charter (Cable) to deliver more than 1.6 million impressions.
Radio	An average of 120 radio spots ran per week in February, March, April, May, June, July, September, November and December in 2018. Radio stations on which campaign spots aired include: KATS-FM (Adult Oriented Rock), KHHK-FM (CHR), KMNA-FM (Mexican Regional) KFLD-AM (News/Talk) Tri Cities Stations:, KEYW-FM (Hot AC), KORD-FM (Country), KUJ-FM (CHR), and KZTB-FM (Mexican Regional) Radio advertising delivers 900,800 impressions.
Newspaper	Newspaper placements included: Dayton Chronicle, La Voz Hispanic News, The Waitsburg Times, Walla Walla Union-Bulletin and Yakima Herald-Republic.
Website: Pacificpower.net/***watt***smart Be***watt***smart.com	Pacific Power's ***watt***smart website, pacificpower.net/***watt***smart, and promotional URL be***watt***smart.com link directly to the energy efficiency landing page and fulfill the campaign's call-to-action to engage customers in the Company's energy efficiency programs. These sites further support all other forms of communications by serving as a source for detailed information regarding the company's programs and other energy efficiency opportunities.
Twitter	Other interactive campaign elements such as online media and social media work with traditional media to enhance the campaign by driving traffic to the program websites. Energy efficiency tweets are scheduled on a weekly basis.
Facebook	Facebook is used to build awareness for early adopters regarding energy efficiency tips and provides a forum to share information. Information and tips are posted three times a week. We also use promoted posts and mobile posts to help expand the reach. In addition, paid Facebook ads encourage clicks to drive traffic to the website.
Other Online	Digital advertising supports the broadcast and print media in increasing awareness to a segment of customers who are likely to be receptive to energy-saving messaging. Some of these uses include banner ads on regional and news sites and entertainment platforms such as Pandora and YouTube, behavioral ad targeting, demographic targeting, geographic targeting and pay-per-click ad placements.

The 2018 Communications and Outreach plan was reviewed with the Demand-side Management Advisory Group in December 2017. The 2018 plan contained all the same components of the 2017 plan with the additional focus on Facebook and YouTube advertising, an increased digital presence, the continuation of television to target business customers, and a decrease in newspaper and magazine advertising.

The Company's 2017 research showed that among respondents 73 percent (residential) and 67 percent (non-residential) think Pacific Power is doing a good job of offering solutions to help customers use energy more efficiently. Similarly 73 percent (residential) and 66 percent (non-residential) report the Company is doing a good job of providing information on how to control electricity costs.

Among residential customers, 48 percent are aware of wattsmart incentives. Of those aware, 64 percent will consider using wattsmart incentives as a solution. Among non-residential customers 56 percent report the company is doing a good job of providing incentives to save money on energy bills.

More than 79 percent of residential and 49 percent of non-residential respondents report taking action to reduce their energy use in the past year. Of those taking action, the most common actions are installing energy-efficient lighting, turning off lights more frequently, and reducing heating thermostat settings.

The primary reason customers are taking action is to save money 74 percent (residential) and 76 percent (non-residential) the secondary reason customer take action is to help the environment. The objectives of the communications and outreach campaign in the 2019-20 biennium are to continue to increase awareness of the availability and benefits of energy efficiency programs, cash incentives and resources in order to boost participation and achieve energy conservation targets in Washington. In 2019-20, the Company will revisit the residential creative developed in 2017, and freshen it as needed for seasonality or new offers. We intend to continue building on the success of the existing wattsmart integrated communications campaign including the use of television advertising to target both residential and business customers. The Company will create new business focused advertising to highlight existing wattsmart Business program participants and encourage other businesses to pursue energy efficiency upgrades in order to boost their bottom lines, enhance their workplaces and realize other benefits.

Proposed adjustments for the 2018/2019 biennium:

Communication Tactic	2018/2019
Television: A selection of ads will be rotated, both 30-second and 15-second TV spots, with an average of 100 TV placements each week that the campaign is on the air. KAPP (ABC), KCYU (FOX), KIMA (CBS), KNDO (NBC), KUNW (UNIV) and Charter (Cable)	Freshen residential creative developed in 2017 and continue to refine messaging based on customer research. Freshen wattsmart Business creative developed in 2015 to promote business efficiency.
Radio: Radio stations on which campaign spots will air include KATS-FM (Adult Oriented Rock), KHHK-FM (CHR), KMNA-FM (Mexican Regional) KFLD-AM (News/Talk) Tri Cities Stations:, KEYW-FM (Hot AC), KORD-FM (Country), KUJ-FM (CHR), and KZTB-FM (Mexican Regional)	Utilize creative developed in 2017 and continue to refine messaging based on customer research. Develop new wattsmart Business creative to promote business efficiency.
Newspaper Dayton Chronicle, The East Washingtonian, La Voz Hispanic News, The Waitsburg Times, Walla Walla	Utilize creative developed in 2017 and continue to refine messaging based on customer research. Develop new wattsmart Business creative to promote business efficiency.

Union Bulletin and Yakima Herald-Republic.	
Web: pacificpower.net/*watt*smart, and promotional URL be*watt*smart.com link directly to the energy efficiency landing page.	Messages rotate each month based on the season. Continue to simplify the web pages and get the customers to the information they are looking for more easily.
Twitter	Tweets posted on a weekly basis.
Facebook	Information and tips posted three - five times a week. Promoted video and static posts and mobile ads will be added where appropriate. Promote business case studies, to get additional leverage from these tools.
Digital	Include video and static banner ads on local sites, blogs, behavioral ad targeting, and pay-per-click ad placements and digital search for business customers. Include YouTube and Pandora in media mix to extend reach to business and residential customers.
PR: Capitalize on existing assets and tools to deploy news media outreach and consumer engagement efforts that are aligned with marketing (corporate) objectives.	Pitches will be focused on promoting business case studies and seasonal messaging.

Given the dynamic nature of communications, the company will review the proposed plan with the demand-side advisory group in the fourth quarter of 2018 and seek their comments to shape the final 2019 plan.

Cost Effectiveness

2018-2019 Portfolio

The cost effectiveness of individual programs proposed for the 2018-2019 biennium period and the portfolio views described below was assessed based on forecasted expenditures and energy savings.

Cost effectiveness is provided at the following levels:

- Individual program[20] or initiative[21] level
- Residential energy efficiency portfolio (Company programs)
- Non-residential energy efficiency portfolio(Company programs) [22]
- Total Company portfolio with portfolio costs added
- Total Company portfolio with portfolio costs and non-energy benefits added
- Total Company portfolio with portfolio costs and NEEA added
- Total Company portfolio with portfolio costs, NEEA and non-energy benefits added

Forecasted energy savings utilized in this analysis are gross savings and the impact of line losses is indicated with an "at site" or "at generation" designation. Line losses for retail customer programs are based on the Company's 2012 line loss study.

Consistent with the new rules and staff direction, cost-effectiveness for the low-income weatherization program will not be assessed at a program or portfolio level. Reporting for the program will include number of residences weatherized, number of measures installed, energy savings and total expenditures.

All cost effectiveness calculations utilize a Net-to-gross ratio of 1.0 consistent with the Council's methodology and 8(a) of Order 01 in Docket UE-152072. The energy savings attributed to each program are shaped according to specific end-use savings (the hourly calculation of when energy is used for the various end-use measures from which the savings are derived). Program costs and the value of the energy savings are then compared on a present value basis with the Company's 2017 Integrated Resource Plan ("IRP") calculated decrement values for demand-side resource savings and avoided capacity investments. The energy efficiency resource decrement values are fully shaped to represent the 8,760 hourly values that exist within a calendar year. By matching the hourly savings with the hourly avoided costs, both energy and capacity impacts of energy efficiency savings are recognized.

Costs utilized in the portfolio analysis are those with no direct energy savings attributed to them and include Energy Education in Schools, Customer outreach/communications and Program Evaluations (and savings verification).

The Technical Reference Library and potential study update costs required by I-937 are considered initiative compliance costs rather than program costs and will not be included in the

[20] Home Energy Savings, Home Energy Reports
[21] NEEA
[22] ***watt***smart Business

determination of the demand-side management program cost effectiveness. These costs will be included in portfolio cost effectiveness calculations.

The five California Standard Practice Manual cost effectiveness tests as modified in the Northwest were utilized in the cost benefit analysis. Additional information on cost effectiveness in WAC and the test utilized by the council is provided below.

As specified in WAC 480-109-100 "A utility's conservation portfolio must pass a cost effectiveness test consistent with that used in the Northwest Conservation and Electric Power Plan. A utility must evaluate conservation using the cost effectiveness test consistent with those used by the council and as required by the commission except as provided by WAC 480-109-100 (10)."

The Northwest Power and Conservation Council's Seventh Power Plan provides information on cost effectiveness on page G-11 of Appendix G. "The Council uses the total resource net levelized cost (TRC net levelized cost) for its analysis of the cost of the conservation measures, which is similar to the Societal Cost Test outlined in the National Action Plan for Energy Efficiency and the California Standard Practice Manual."

The National Action Plan for Energy Efficiency provides information on cost effectiveness and specifics of each test in Understanding the Cost Effectiveness of Energy Efficiency Programs available at the following link.

https://www.epa.gov/sites/production/files/2015-08/documents/cost-effectiveness.pdf

The benefits and costs for each test are outlined in Tables 3-1 and 3-2 of the "Understanding" document

The PacifiCorp Total Resource Cost (PTRC) test results in the AEG Applied Energy Group analysis include the 10 percent Conservation Adder and quantifiable non-energy benefits and is analogous to the Societal Cost Test (SCT) referenced by the Council. The results for the other four standard tests are also provided in the analysis.

Additional information for the cost-effectiveness assessment of each program, initiative and the portfolios are available in Appendix 1 to this document.

National Standard Practice Manual and Resource Value Test

Pacific Power is participating in the Statewide Advisory Group process which includes an action item to assess areas for cost effectiveness improvements and to investigate the Resource Value Test (RVT). Five meeting have already been held in 2018. The next meeting is scheduled for Novembers 2018.

Appendix 1 – Program and Portfolio Level Cost-Effectiveness

Appendix 2 - Program Tariffs