



## 2015 California Annual Review of Energy Efficiency Programs

January 1, 2015 – December 31, 2015

Issued March 15, 2016



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### LIST OF ABBREVIATIONS AND ACRONYMS

APS	Advance Power Strip
CFL	Compact Fluorescent Lighting
Commission	California Public Utilities Commission
DSM	Demand-Side Management
DSM Central	DSM Central – Project tracking system
DSM Tariff Rider	Schedule S-191 Customer Efficiency Service Charges
EM&V	Evaluation, Measurement and Verification
EF	Energy Factor
GWh	Gigawatt hour
HVAC	Heating, Ventilation and Air Conditioning
IRP	Integrated Resource Plan
kWh	Kilowatt-hour
kW	Kilowatt
LED	Light-emitting diode
MW	Megawatt
RAC	Room Air Conditioner
TRL	Technical Reference Library (database of measure assumptions)
TRC	Total Resource Cost
UCT	Utility Cost Test
WSB	<i>wattsmart</i> Business

## EXECUTIVE SUMMARY

PacifiCorp d/b/a Pacific Power (“Company”) is a multi-jurisdictional electric utility providing retail service to customers in California, Idaho, Oregon, Utah, Washington, and Wyoming. PacifiCorp serves approximately 45,000 customers in Shasta, Modoc, Del Norte, and Siskiyou counties in northern California.

The Company received approval from the California Public Utilities Commission (the “Commission”), to offer its customers energy efficiency information, services and incentives through programs targeting residential, commercial, industrial and agricultural customers in Application 07-07-011, Decision (“D.”) 08-01-041.<sup>1</sup>

The Company, on behalf of its customers, invested \$2.0m in energy efficiency information and resource acquisitions during the period January 1, 2015, through December 31, 2015. The investment yielded approximately 7.5 gigawatt-hours (“GWh”) in first year savings<sup>2</sup> and approximately 0.88 megawatts (“MW”) of capacity reduction.<sup>3</sup>

As approved in D.08-01-041, costs associated with the energy efficiency programs are recovered through Schedule S-191, Surcharge to Fund Public Purpose Programs, hereafter referred to collectively as DSM Tariff Rider.

This report provides details on program results and activities, expenditures, and the current status of the DSM Tariff Rider for the period of January 1, 2015 through December 31, 2015. Program results are summarized in Table 1 below.

**Table 1**  
**Total Portfolio Performance**

<b>2015 Total Portfolio Performance</b>	
Expenditures	\$1,972,005
kWh-Yr Savings (gross – at generation)	7,511,514
Portfolio Total Resources Cost (TRC)	1.62

<sup>1</sup> On February 24, 2015, PacifiCorp filed advice letter 518-E requesting changes to its non-residential energy efficiency programs. FinAnswer Express (Schedule A-115) and Energy FinAnswer (Schedule A-125) were consolidated into *wattsmart* Business (Schedule A-140). Advice Letter 518-E became effective May 1, 2015. See discussion at page 7.

<sup>2</sup> The values at generation include line losses between the customer site and the generation source. The Company’s assumed line losses by sector are 11.4% for residential, 11.1% for commercial, 9.9% for industrial and 11.4% for irrigation. These values are based on the Company’s 2009 Transmission and Distribution Loss Study by Management Applications Consulting, Inc. published in November 2011.

<sup>3</sup> See Planning Section for explanation on how the capacity contribution savings values are calculated.

The cost-effectiveness<sup>4</sup> of the portfolio was 1.62 from the Total Resources Cost (“TRC”) and 3.08 from Utility Cost Test (“UCT”).

Overall, portfolio savings increased from 2014 levels, from 7.4 GWh compared to the acquisition of 7.5 GWh in 2015. At a sector level, residential savings decreased 18 percent from 2014. Non-residential savings increased 33 percent from 2014. Total portfolio expenditures increased by 17 percent from \$1,689,817 in 2014 to \$1,972,005 in 2015. Portfolio results exclude Low Income Weatherization achievements.

Since the late 1970’s, the Company has provided customers with information on no-cost, low-cost energy efficiency practices through billing inserts and general Company communication and outreach. During the reporting period, no-cost and low-cost energy efficiency tips or information regarding energy efficiency programs were included in customers’ bills through newsletters and other program inserts.

Additionally, the Company, working with its third-party program delivery administrators,<sup>5</sup> collaborated with retailers, contractors and vendors to support the Company’s energy efficiency programs in California. Table 2 shows the number of retailers, contractors and vendors by measure type.

**Table 2**  
**Energy Efficiency Infrastructure**

<b>Sector</b>	<b>Type</b>	<b>No.</b>
Residential	Upstream Retailers	20
	Downstream Retailers	15
	HVAC Trade Allies	15
	Plumbing Trade Allies	11
	Weatherization Trade Allies	4
Commercial and Industrial/ Agricultural	Lighting Trade Allies	23
	HVAC Trade Allies	6
	Motor Trade Allies	11
	Irrigation Trade Allies	6
	Small Business Contractors	2
	Engineering Firms	21

<sup>4</sup> Cost-effectiveness was calculated using the E3 (PG&E model) calculator.

<sup>5</sup> See program-specific section for background information on third-party administrators.

## REGULATORY ACTIVITIES

The Company filed Application 13-07-015 on July 22, 2013, to reactivate the surcharge that funds its Demand-Side Management (“DSM”) programs through a DSM Tariff Rider. The Commission approved this on April 10, 2014, effective 2014 through 2016.

The Company filed Advice Letter 518-E on February 24, 2015 to 1) cancel Electric Service Schedules A-115, A-120, A-122, A-125, A-140, A-141, PA-150, and PA-155, and 2) consolidate program services and incentives offered in Electric Service Schedules A-115, FinAnswer Express, and A-125, Energy FinAnswer, with modification, into a new Electric Service Schedule A-140, Non-Residential Energy Efficiency. The changes were posted to the program website on February 27, 2015. Advice Letter 518-E was approved by the Commission on April 30, 2015 and the changes became effective on May 1, 2015.

The Company filed its 2014 Annual Review of Energy Efficiency Programs with the Commission on March 16, 2015.

Revenues for the DSM Tariff Rider are tracked through a DSM balancing account. Monthly expenditures, collected revenues and other relevant activities for 2015 are summarized in Table 3 below.

Table 3  
DSM Balancing Account

Month	Expenditures	S-191 Revenue	Cash Basis Accumulative Balance	Net Cost Accrual	Accrual Basis Accumulative Balance
Dec-14			\$ 1,196,744	\$ 338,561	\$ 1,535,305
Jan-15	\$ 234,573	\$ (203,337)	\$ 1,227,980	\$ (73,046)	\$ 1,493,495
Feb-15	\$ 124,163	\$ (224,182)	\$ 1,127,961	\$ (9,360)	\$ 1,384,116
Mar-15	\$ 149,778	\$ (146,454)	\$ 1,131,285	\$ (35,322)	\$ 1,352,119
Apr-15	\$ 154,867	\$ (123,055)	\$ 1,163,098	\$ (104,395)	\$ 1,279,536
May-15	\$ 83,104	\$ (124,430)	\$ 1,121,772	\$ 64,085	\$ 1,302,295
Jun-15	\$ 238,432	\$ (197,929)	\$ 1,162,276	\$ (13,573)	\$ 1,329,225
Jul-15	\$ 167,279	\$ (169,618)	\$ 1,159,936	\$ (12,283)	\$ 1,314,603
Aug-15	\$ 148,612	\$ (196,211)	\$ 1,112,337	\$ 25,349	\$ 1,292,353
Sep-15	\$ 102,494	\$ (171,157)	\$ 1,043,674	\$ 18,772	\$ 1,242,462
Oct-15	\$ 184,346	\$ (154,324)	\$ 1,073,695	\$ (64,859)	\$ 1,207,624
Nov-15	\$ 233,665	\$ (114,350)	\$ 1,193,011	\$ 87,154	\$ 1,414,093
Dec-15	\$ 302,700	\$ (179,777)	\$ 1,315,933	\$ (118,973)	\$ 1,418,043
<b>2015 Total</b>	<b>\$ 2,124,013</b>	<b>\$ (1,801,486)</b>		<b>\$102,110*</b>	

\*December 2015 accrual

## Column Explanations:

Expenditures: Monthly expenditures for approved energy efficiency programs.

S-191 Revenue: Revenue collected through the DSM Tariff Rider.

Cash Basis Accumulative Balance: Current balance of the account; a running total of account activities, excluding the accrued cost. A positive balance means cumulative expenditures exceeds cumulative revenue; a negative balance means cumulative revenue exceeds cumulative expenditures.

Net Cost Accrual: Two accrual entries are made each month for expenditures of energy efficiency programs. One estimates the incurred cost not yet processed, and the other reverses the estimate from the previous month. The amount shown here is the net of the two entries. This accounting principle was applied to the balancing account but would not be included when calculating the carrying charges.

Accrual Basis Accumulative Balance: Current balance of the account including accrued costs. A positive balance means cumulative expenditures exceeds cumulative revenue; a negative balance means cumulative revenue exceeds cumulative expenditures.

## PLANNING PROCESS

### *Integrated Resource Plan*

The Company develops a biennial integrated resource plan (“IRP”) as a means of balancing cost, risk, uncertainty, supply reliability/deliverability and long-run public policy goals.<sup>6</sup> The plan presents a framework of future actions to ensure the Company continues to provide reliable, reasonable cost service with manageable risks to the Company’s customers. Energy efficiency and peak management opportunities are incorporated into the IRP based on their availability, characteristics and costs.

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

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

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

As technical support for the IRP, a third-party demand-side resource potential assessment (“Potential Assessment”) is conducted to estimate the magnitude, timing and cost of energy efficiency and peak management resources.<sup>7</sup> The main focus of the Potential Assessment is on

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<sup>6</sup> Information on the Company’s integrated resource planning process can be found at the following web address: <http://www.pacificorp.com/es/irp.html>.

<sup>7</sup> PacifiCorp Demand-Side Resource Potential Assessment For 2015-2034, <http://www.pacificorp.com/es/dsm.html>.

resources with sufficient reliability characteristics that are anticipated to be technically feasible and assumed achievable during the IRP's 20-year planning horizon. The estimated achievable energy efficiency potential identified in the 2015 Potential Assessment for California is 202 GWh by 2034, or 23 percent of projected baseline loads.<sup>8</sup> By definition this is the energy efficiency potential that may be achievable to acquire during the 20-year planning horizon; prior to screening for cost-effectiveness through the Company's IRP process.

The achievable technical potential of Class 2 (energy efficiency) resources for California by sector is shown in Table 4. The 2015 Potential Assessment indicates that approximately 2 percent of the achievable technical potential for the Company, excluding Oregon,<sup>9</sup> is available within its California service area.<sup>10</sup>

**Table 4**  
**California Energy Efficiency Achievable Technical Potential by Sector**

Sector	Cumulative GWh	
	by 2034	Percent of Baseline Sales
Residential	93	23%
Commercial	91	29%
Industrial	8	14%
Irrigation	9	10%
Street Lighting	1	32%

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

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

- California and Wyoming utilize the standard TRC test excluding quantifiable non-energy benefits and the 10% benefit adder Oregon and Washington consider.
- Utah uses the UCT as the primary determination of cost-effectiveness.
- Idaho, Oregon, and Washington use the Total Resource Cost ("TRC") test and consider the inclusion of quantifiable non-energy benefits.

<sup>8</sup> Ibid, Volume 2, page 4-2.

<sup>9</sup> Oregon energy efficiency potential assessments are performed by the Energy Trust of Oregon.

<sup>10</sup> Volume 1, Page 4-2, PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034.

- Oregon and Washington, in addition to considering quantifiable non-energy benefits, apply an additional 10% benefit to account for non-quantifiable externalities, consistent with the Northwest Power Act.

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

### *Estimated Peak Contributions*

The reported capacity reduction of 0.88 MW (at generation) for energy efficiency programs during 2015 represents the estimated MW impact of the energy efficiency portfolio during PacifiCorp's system peak period. An energy-to-capacity conversion factor developed from Class 2 DSM selections in the 2015 IRP is used to translate 2015 energy savings to estimated demand reduction during the system peak. The utilization of this factor in the MW calculation assumes that the energy efficiency resources acquired through the Company's programs have the same average load profile as those energy efficiency resources selected in the 2015 IRP. Utilization of this factor in determining the MW contribution of energy efficiency programs for 2015 is detailed in Table 5 below.

Table 5  
Estimated Peak Contribution

Description	Value
First year Energy Efficiency program MWh savings acquired during 2015	7,512
Conversion factor: Coincident MW/MWh	0.00012
Estimated coincident peak MW contribution of 2015 Energy Efficiency acquisitions	0.88

## ENERGY EFFICIENCY PROGRAMS

The Company offers energy efficiency programs to all major customer sectors: residential, commercial, industrial and agricultural. The overall energy efficiency portfolio includes two programs: *Home Energy Savings* – Schedule D-118, and *Non-Residential Energy Efficiency (aka wattsmart Business)* – Schedule A-140. A Refrigerator Recycling (“*See ya later, refrigerator®*”) program is part of the *Home Energy Savings* program in California. Due to specific and separate marketing and tracking, it is shown as a sub-section in the Annual Report. *Low Income Weatherization* is funded and reported in a separate docket<sup>11</sup> and therefore its program expenditures, cost-effectiveness and programmatic updates are not provided in the 2015 DSM Annual Review of Energy Efficiency Programs report.

Program, sector and portfolio level results for 2015 are provided in Table 6.

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

	kWh Savings (at site)	kWh Savings (at generation)	Investment
Home Energy Savings	3,428,254	3,820,198	\$ 848,496
<b>Total Residential</b>	<b>3,428,254</b>	<b>3,820,198</b>	<b>\$ 848,496</b>
WSB Commercial	1,809,317	2,010,929	\$ 637,273
WSB Industrial	795,508	874,399	\$ 288,342
WSB Agriculture	723,307	805,988	\$ 174,630
<b>TOTAL WSB</b>	<b>3,328,132</b>	<b>3,691,316</b>	<b>\$ 1,100,244</b>
Portfolio - TRL			\$ 6,850
Portfolio - DSM Central			\$ 4,501
Portfolio - EM&V			\$ 11,914
<b>Total Energy Efficiency</b>	<b>6,756,386</b>	<b>7,511,514</b>	<b>\$ 1,972,005</b>

<sup>11</sup> See Docket A.15-02-001 et al.

## RESIDENTIAL PROGRAMS

### *Home Energy Savings*

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

Program participation by measure for the current period is provided in Table 7.

Table 7  
Eligible Program Measures (Units)

Measure Category	Measure Quantity	Total Incentive	kWh/Yr Savings @ site
Advanced Power Strips - Load Sensing	1,177	\$ 17,655	35,310
Attic Insulation	48,748 (sq. feet)	\$ 13,959	27,878
Basic Kit	1,421	\$ 20,220	573,058
Best Kit	168	\$ 6,531	75,097
Better Kit	37	\$ 667	14,652
CFL	75,584	\$ 95,115	1,105,825
CFL Kit	196	\$ 1,074	11,098
Clothes Washer - Electric DHW & Electric Dryer	25	\$ 1,275	3,592
Clothes Washer - Electric DHW & Gas Dryer	1	\$ 50	54
Clothes Washer - Gas DHW & Electric Dryer	8	\$ 400	848
Duct Sealing and/or Insulation	129	\$ 52,500	174,178
Evaporative Cooler	3	\$ 300	729
Heat Pump - Air Source	13	\$ 10,615	35,411
Heat Pump - Ductless	126	\$ 180,000	479,378
Heat Pump Water Heater	4	\$ 2,600	4,498
LED	24,318	\$ 113,407	501,559
LED Kit	22	\$ 436	1,764
Refrigerator CEE Tier 3	2	\$ 100	234
Wall Insulation	3,145 (sq. feet)	\$ 1,708	12,297
Water Heater	3	\$ 150	468
<b>TOTAL</b>		<b>\$ 518,761</b>	<b>3,057,928</b>

### Program Changes

On April 16, 2015 the federal standard for electric storage tank water heaters increased for all equipment sizes, requiring units 55 gallons and above to have an Energy Factor (EF) of 1.92 or higher, and requiring units smaller than 55 gallons to achieve an EF of 0.94 or higher. This change effectively aligned the efficient and baseline EF for tanks less than 55 gallons and eliminated energy savings. For tanks 55 gallons and above, the minimum EF is achievable only through use of heat pump technology and any incremental energy savings must be delivered by heat pump units exceeding the minimum federal standards. Water heating standards changes were anticipated in the 2014 program modifications and, subsequently, incentives for resistance tanks and heat pump technology that did not exceed current federal standards were removed.

### Program Management

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

### Program Administration

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

- Retailer and trade ally engagement – CLEAResult identifies, recruits, supports and assists retailers to increase the sale of energy efficient lighting, appliances and electronics. CLEAResult enters into promotion agreements with each lighting manufacturer and retailer for the promotion of discounted CFL and LED bulbs. The agreements include specific retail locations, lighting products receiving incentives and not-to-exceed annual budgets. HVAC, plumbing and weatherization trade allies engaged with the program are provided with program materials, training, and regular updates.
- Inspections – CLEAResult recruits and hires inspectors to verify on an on-going basis the installation of measures. A summary of the inspection process is in Appendix 1.
- Incentive processing and call-center operations – CLEAResult receives all requests for incentives, determines whether the applications are completed, works directly with customers when information is incorrect and/or missing from the application and processes the application for payment.
- Program specific customer communication and outreach – A summary of the communication and outreach conducted by CLEAResult on behalf of the Company is outlined in the Communication, Outreach, and Education section.

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

### Infrastructure

The Company is working with nearly two dozen retailers on promoting high efficiency light bulbs, fixtures and room air conditioners (“RAC”) and advance power strips (“APS”). Table 8 lists the participating upstream retailers<sup>12</sup>.

Table 8  
Upstream Retailers

Retailer	City	CFLs	LEDs	Fixtures	RACs	APS
Ace Hardware #1134	Mt Shasta	√	√	√		
Ace Hardware #7646	Crescent City	√	√	√		
Dollar Tree #1251	Yreka	√	√			√
Dollar Tree #1990	Crescent City	√	√			√
Eller's Fort Dick Market	Crescent City	√	√	√		
Fort Jones Frontier Hardware	Fort Jones	√	√			
Four Seasons Supply Center #4523	Alturas	√	√	√		
G & G Hardware	Yreka	√	√	√		
Home Depot #8524	Crescent City	√	√	√		
Luke's Yreka Drug #1	Yreka	√	√	√		
Safeway #0954	Crescent City	√	√			
Solano's Alpine Hardware	Mt Shasta	√	√	√	√	
Solano's, Inc.	Weed	√	√	√	√	
True Value Hardware - Coast	Crescent City		√			
True Value Hardware - Cooley & Pollard	Yreka		√			
True Value Hardware - Dunsmuir	Dunsmuir	√	√	√		
True Value Hardware - Merrill Lumber	Dorris		√			
True Value Hardware - Seab	Alturas		√			
Wal-Mart #1630	Yreka	√	√	√		
Wal-Mart #1910	Crescent City	√	√	√		

<sup>12</sup> To be considered for participation in upstream buy downs, retailer sales coming from Pacific Power customers must be a significant percentage of total sales.

Table 9 lists the 2015 participating downstream retailers and the product types that were redeemed at each location.

Table 9  
Participating Downstream Retailer and Redemptions

Retailer	City	Electric Water Heater	Clothes Washer	Refrigerator	Evaporative Cooler - Tier 2	Heat Pump Water Heater, Self-installed	Insulation-Attic	Insulation-Wall	No Redemptions in 2015
Ace Hardware #1134	Mt Shasta								√
Ace Hardware #8207	Yreka	√							
Black's Appliances Audio & Video	Yreka		√						
Edgewood Custom Interiors	Weed								√
Four Seasons Supply Center #4523	Alturas								√
Home Depot #8524	Crescent City	√	√	√			√		
Home Depot #8557	Phoenix		√						
Lowe's of Redding	Redding		√						
Reliable Plumbing	Montague	√							
Rons Furniture and Appliance	Mt Shasta								√
Sears #2179	Medford		√						
Sears #3489	Harbor		√						
Sears #3998	Yreka		√						
Solano's Alpine Hardware	Mt Shasta								√
Solano's, Inc.	Weed								√

Table 10 lists the HVAC trade allies participating in the program and the product types that were redeemed at each location.

Table 10  
HVAC Contractors and Redemptions

Trade Ally Name	City	Electric System to Heat Pump Conversion - Tier 1	Electric System to Heat Pump Conversion - Tier 2	Evaporative Cooler - Tier 2	Heat Pump to Heat Pump Upgrade - Tier 1	Heat Pump, Multi-Head, Ductless	Heat Pump, Single-Head, Ductless	No Redemptions in 2015
Chimney Kraft	Crescent City					√	√	
Coastal Heating, LLC.	Brookings						√	
Downey Heating & Cooling	Fort Jones	√			√	√	√	
Dressler Heating and AC	Yreka					√		
Elite Energy Solutions	Lindon, UT							√
Frank's Heating and Refrigeration	Crescent City		√		√		√	
Harbor View Windows, Heating and Air	Brookings, OR					√	√	
MDHVAC	Yreka						√	
Metal Masters Inc.	Medford, OR	√						
Meyer & Son's Heating, Plumbing & AC	Dunsmuir							√
Mike Brown Heating and A.C	Yreka					√	√	
Mountain Air Heating & Cooling Inc.	Yreka					√	√	
Ray-Mac Mechanical, Inc.	Mt. Shasta					√	√	
SVM Plumbing, Heating & Air	Yreka				√		√	
United Mechanical Contractors, Inc.	Klamath Falls, OR							√

Table 11 lists the plumbing trade allies participating in the program and the product types that were redeemed at each location.

**Table 11**  
**Plumbing Trade Allies and Redemptions**

Trade Ally Name	City	Heat Pump Water Heaters	No Redemptions in 2015
Chimney Kraft	Crescent City		√
Downey Heating & Cooling	Fort Jones		√
Dressler Heating and AC	Yreka		√
Frank's Heating and Refrigeration	Crescent City		√
Harbor View Windows, Heating and Air	Brookings, OR		√
Meyer & Son's Heating, Plumbing & AC	Dunsmuir		√
Mike Brown Heating and A.C	Yreka		√
Mountain Air Heating & Cooling Inc.	Yreka		√
Ray-Mac Mechanical, Inc.	Mt. Shasta		√
SVM Plumbing, Heating & Air	Yreka	√	
United Mechanical Contractors, Inc.	Klamath Falls, OR		√

Table 12 lists the Weatherization trade allies participating in the program and the product types that were redeemed at each location.

**Table 12**  
**Weatherization Trade Allies and Redemptions**

Trade Ally Name	City	Insulation-Attic	Insulation-Wall	No Redemptions in 2015
Elite Energy Solutions	Lindon, UT			√
Meek's Building Center	Redding	√	√	
Performance Insulation	Montague	√		
Red Sky Roofing	Crescent City	√		

### *Refrigerator Recycling*

As previously mentioned, the Refrigerator Recycling (“*See ya later, refrigerator®*”) program is part of the *Home Energy Savings* program in California. Due to specific and separate marketing and tracking, it is shown as a sub-section in this report. *See ya later, refrigerator®* is designed to decrease electricity use (kWh) through voluntary removal and recycling of inefficient refrigerators and freezers. Participants received a \$50 incentive for each qualifying refrigerator or freezer recycled through the program and an energy-savings kit that includes two CFLs, a refrigerator thermometer card, energy savings educational materials, and information on other efficiency programs. The program was available to residential and business customers, and retailers. Program participation by measure for 2015 is provided in Table 13.

Table 13  
Eligible Program Measures (Units)

Measure Category	Quantity	Total Incentive	kWh/Yr Savings @ site
Energy Savings Kit	325	\$ 1,930	10,657
Energy Savings Kit (residential used in a business)	3	\$ 18	98
Freezer Recycling	77	\$ 3,850	66,913
Freezer Recycling (residential used in a business)	2	\$ 100	1,738
Refrigerator Recycling	279	\$13,950	289,881
Refrigerator Recycling (residential used in a business)	1	\$ 50	1,039
<b>Total</b>		<b>\$19,898</b>	<b>370,326</b>

### Program Management

The program manager who is responsible for the *Refrigerator Recycling* program in California is also responsible for the *Refrigerator Recycling* program in Washington. The program manager is responsible for the cost-effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in the tariff and/or posted on the Company website.

In Q4 2014, the program manager identified media placement expenditures were paid twice in all states between 2013 and 2014. The media placement expenditures were paid to JACO and the Company’s media vendor. Accordingly, JACO issued a credit to the program which was allocated to all states based upon the percentage of media expenditures incurred.

### Program Administration

The program was primarily administered by JACO Environmental (“JACO”) in 2015, one of the largest recyclers of household appliances in the United States. JACO was responsible for the following:

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

The Company employs independent third party contract inspectors to ensure JACO's performance meets required criteria. A summary of the inspection process is included in Appendix 1.

#### Program Changes

On November 19, 2015, the Company was notified by JACO that they entered into a voluntary receivership, but customer pickups would continue. On November 21, the Company was notified pickups were cancelled due to complications with transferring the receivership. On November 24, the Company was notified that operations had ceased. The Company immediately posted this information on the program web site and utilized another vendor to contact the affected customers to inform them the pickup was cancelled. Initial data indicates this impacted 12 California customers. The Company also learned that JACO bank accounts had been closed impacting the cashing of checks and customers who were recent participants would experience delays in receiving their checks.

On December 1, 2015, the Company notified the Commission of the recent developments with JACO, the unavailability of the program offer and the Company's plan to use the program change process to suspend the appliance recycling offer and allow time to evaluate the options.

Due to JACO closing its bank account with recent customers, the Company developed a process to pay these incentives and any bank fees incurred by customers. The process was communicated to affected customers on December 9, 2015.

During December 2015, the Company began an expedited sole source procurement process to contract for remedial or "clean-up" appliance recycling services. This provider would contact customers who had pick-ups scheduled with JACO that were cancelled in late November and, if the customer was still interested, offer the same removal service and incentive. A contract with Appliance Recycling Centers of America (ARCA) was executed in late December and customer outreach began in early 2016. The Company will continue to assess the cost-effectiveness of offering the program in 2016 and beyond.

## NON-RESIDENTIAL PROGRAM

The commercial and industrial/agricultural energy efficiency program was consolidated into a single *Non-Residential Energy Efficiency* program, Schedule A-140<sup>13</sup>, which became effective May 1, 2015. The programs that were consolidated include FinAnswer Express and Energy FinAnswer. The *Non-Residential Energy Efficiency* program is promoted to the Company's customers as *wattsmart Business*.<sup>14</sup> Performance results for 2015 are consolidated and reported under *wattsmart Business*.

The *wattsmart Business* program is intended to maximize the efficient utilization of electricity for new and existing non-residential loads through the installation of energy efficiency measures and energy management protocols. Qualifying measures are any measures which, when installed in an eligible facility, result in verifiable electric energy efficiency improvements. Program performance is shown in Table 14.

Table 14  
Program Performance by Sector

Sector	Total Projects	Total Incentive	kW Savings	kWh/Yr Savings @ site
Commercial	81	\$ 289,265	235	1,809,317
Industrial	4	\$ 101,057	24	795,508
Agriculture	31	\$ 87,236	80	723,307
<b>Grand Total</b>	<b>116</b>	<b>\$ 477,559</b>	<b>339</b>	<b>3,328,132</b>

<sup>13</sup> Program details such as incentive tables and program definitions are available on our website at [https://www.pacificpower.net/content/dam/pacific\\_power/doc/Business/Save\\_Energy\\_Money/CA\\_wattsmartBusiness\\_Definitions\\_Incentive\\_Tables\\_Information.pdf](https://www.pacificpower.net/content/dam/pacific_power/doc/Business/Save_Energy_Money/CA_wattsmartBusiness_Definitions_Incentive_Tables_Information.pdf).

The program brochure is available at

[https://www.pacificpower.net/content/dam/pacific\\_power/doc/Business/Save\\_Energy\\_Money/CA\\_wattsmartBusiness\\_Brochure.pdf](https://www.pacificpower.net/content/dam/pacific_power/doc/Business/Save_Energy_Money/CA_wattsmartBusiness_Brochure.pdf)

<sup>14</sup> On February 24, 2015, the Company filed Advice Letter 518-E requesting authorization to consolidate FinAnswer Express and Energy FinAnswer into a new proposed Non-Residential Energy Efficiency *wattsmart*® Business Program. This filing was approved effective May 1, 2015.

Services and incentives offered through the *wattsmart* Business program include:

- Typical Upgrades: Incentives for lighting, HVAC, compressed air and other equipment upgrades that increase electrical energy efficiency and exceed energy code requirements.
- Custom analysis: Offers energy analysis studies, services and incentives for more complex projects.
- Energy Management: Provides expert facility and process analysis and incentives to help lower energy costs by optimizing customer's energy use. (Offer new as of May 1, 2015.)
- Energy Project Manager Co-funding: Available to customers who commit to an annual goal of completing energy projects resulting in at least 1,000,000 kWh/year in energy savings. (Offer was new as of May 1, 2015.)
- Enhanced incentives for small businesses: Provides enhanced incentives for lighting upgrades installed by an approved *wattsmart* Small Business Contractor at an eligible existing small business customer facility. (Offer was new as of May 1, 2015.)

Program participation and savings by measure category is provided in Table 15.

**Table 15**  
**Installed Program Measures**

Measure Category	Total Incentive	kW Savings	kWh/Yr Savings @ site
Compressed Air	\$ 83,547	10	692,226
Controls	\$ 8,361	8	47,537
Cooling	\$ 1,438	1	3,122
Dishwashers	\$ 1,500	6	11,965
Electronically Commutated Motor	\$ 524	1	9,746
Exterior Lighting	\$ 3,200	-	22,205
General Illuminance	\$ 170,555	125	1,101,816
Green Motor Rewinds	\$ 200	1	2,005
Heat Pump	\$ 120	1	1,956
HVAC	\$ 41,555	57	322,544
Insulation	\$ 232	-	215
Irrigation	\$ 50,491	34	414,658
Irrigation Pumps	\$ 29,955	-	222,455
Lighting	\$ 64,272	31	256,643
Motors	\$ 9,545	6	77,039
Non-General Illuminance	\$ 7,182	13	71,777
Refrigeration	\$ 1,365	-	9,099
Water Distribution Equipment	\$ 3,449	46	60,837
Windows	\$ 67	-	287
<b>Grand Total</b>	<b>\$ 477,559</b>	<b>339</b>	<b>3,328,132</b>

### Program Management

The program manager overseeing program activity in California is also responsible for delivery of *Non-Residential Energy Efficiency* program in Washington. For each state the program manager is responsible for managing the cost-effectiveness of the program, identifying and contracting with the program administrators through a competitive bid process, program marketing, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions of the program set out in the tariff and/or posted on the Company's website.

### Program Administration

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

#### *Trade Ally*

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

Nexant and Cascade are responsible for the following:

- Trade ally engagement – identify, recruit, train, support and assist trade allies to increase sales and installation of energy efficient equipment at qualifying business customer facilities.
- Incentive processing, project facilitation and administrative support – handle incoming inquiries as assigned, process incentive applications, develop and maintain simplified analysis tools and provide program design services, evaluation and regulatory support upon request.
- Inspections – verify on an on-going basis the installation of measures. Summary of the inspection process is in Appendix 1 to this report.

#### *Small Business Enhanced Incentive Offer*

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

- Management of approved contractors – identify, recruit, contract with, train, support, and assist contractors to increase sales and installation of energy efficient lighting equipment at qualifying small business customer facilities. Since the offer was approved in May 2015, Nexant completed the first recruitment and brought two contractors on board – one located in Weed and another in Alturas. There was one active small business project in process as of the end of 2015 and none installed/completed.

- Incentive processing and administrative support – handle incoming inquiries as assigned, process incentive applications, develop and maintain simplified analysis tool and provide program design services, evaluation and regulatory support upon request.
- Inspections – verify on an on-going basis the installation of measures. Summary of the inspection process is in Appendix 1 to this report.

### *Project Manager*

In this channel, the Company's project manager manages a subset of more complex projects. The project manager works directly with the customer or through the Company's regional business managers<sup>15</sup>. The project manager provides customers with program services and incentives using a pre-contracted group of energy engineering consultants. A current list of these consultants is included in the Infrastructure section below.

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

### Infrastructure

To help increase and improve the supplier and installation contractor infrastructure for typical energy efficient equipment and services, the Company established and continues to develop and support trade ally networks for lighting, HVAC, motors and irrigation. This work includes identifying and recruiting trade allies, providing program and technical training and providing sales support on an ongoing basis. The current lists of the trade allies who have applied and been approved as participating *wattsmart* Business vendors are posted on the Company website<sup>16</sup> and is included as Appendix 2 to this report.

Customers are not required to select a vendor from these lists to receive an incentive<sup>17</sup>. The total number of participating trade allies is currently 21. The counts of participating trade allies by technology are shown in Table 16 below.

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<sup>15</sup> Regional business managers are responsible for directly working with California commercial and industrial customers.

<sup>16</sup> Searchable participating vendor lists are available from the Company website. Direct link to the "Find a Vendor" search tool: [http://pacificpower-tradeally.energyefficiencyalliance.net/tradeally/jsp/Contractor\\_Search/ContractorSearch.jsp](http://pacificpower-tradeally.energyefficiencyalliance.net/tradeally/jsp/Contractor_Search/ContractorSearch.jsp)

<sup>17</sup> For the *wattsmart* Small Business enhanced incentives, customers are required to choose one the approved contractors for this offer.

Table 16  
Participating Trade Allies<sup>18</sup>

Lighting trade allies	HVAC trade allies	Motors trade allies	Irrigation trade allies	Small Business - Approved Contractors
23	6	11	6	2

For the project manager delivery channel supporting larger customers, a pre-approved, pre-contracted group of engineering firms can be used to perform facility specific energy efficiency analysis, quality assurance and verification. Table 17 lists the engineering firms currently under contract with the Company and providing services in five states.

Table 17  
Engineering Firms

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

<sup>18</sup> Some trade allies may participate in more than one technology. The count of unique participating firms is less than the total count provided above.

## COMMUNICATIONS, OUTREACH AND EDUCATION

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

### *Customer Communications*

As part of the Company's regular communications to its customers, newsletters delivered to all customer classes promote energy efficiency initiatives and case studies on a regular basis. Inserts and outer envelopes featuring energy efficiency messages have also been used on a consistent basis.

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

### *Program Specific Communications*

#### Home Energy Savings

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

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

In April, the Company promoted specially priced LED bulbs, which were available for as little as \$1 at participating Dollar Tree locations in California. The offer was communicated through a press release, employee email, website and social media.

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



Throughout the year, targeted customer communications were distributed to promote *wattsmart* Starter Kits through direct mail, email and Facebook ads.

In 2015, program communications delivered approximately 186,284 impressions. Table 18 below breaks out the impressions by channel. These estimates do not reflect all of the customer, retailer and trade ally touchpoints.

Table 18  
HES Communication Impressions

Communications Channel	2015
Facebook	137,392
Bill insert	29,000
Email	10,592
Direct mail	9,300

### Refrigerator Recycling

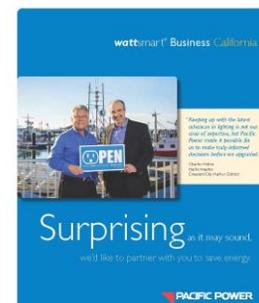
In 2015, *See ya later, refrigerator*® communications consisted of radio, print and digital advertising, bill inserts and social media.

On November 24, 2015, the Company received notice that program administrator, JACO, was ceasing operations immediately. The Company posted a notice on the website to let customer know the program was unavailable. Affected customers also received a direct mail letter and an email to let them know about the situation and that the Company would have replacement incentive checks issued, if necessary.

### wattsmart Business

On May 1, 2015, the Commission approved the Company's filing to make changes to the Non-Residential Energy Efficiency program as well as to consolidate the *FinAnswer Express* and *Energy FinAnswer* programs into one streamlined program called *wattsmart Business*. In anticipation of the change, use of the *FinAnswer* name in communication and outreach was minimized.

New collateral material was developed for *wattsmart Business* and the materials were used for direct customer contact by Company project managers, regional business managers, and trade allies. Customer communications and outreach in support of *wattsmart Business* utilized print advertising, radio ads, bill insert, direct mail, articles in Company newsletters and content on the Company's website throughout the reporting period.



During 2015, communications encouraged energy efficiency lighting upgrades, by featuring participating customer case studies in print ads and newsletter article. A bill insert focused on heating and cooling system upgrades was delivered to customers in June and directed readers to the Company's website.<sup>19</sup> In lieu of paid advertising in the fall, events focused on lighting upgrades which were held for customers in partnership with local Chambers of Commerce in Mt. Shasta and Yreka. Customers were informed about the events through direct email, canvassing and Chamber outreach. Targeted direct mail was sent to irrigation customers in the spring to encourage irrigation retrofits. In 2015, the program garnered 330,715 media impressions. Breakdown of impressions by media type are shown in Table 19.

Table 19  
*wattsmart Business Communication Impressions*

Communications Channel	2015
Radio	276,570
Newspaper	49,366
Irrigation Direct Mail	683
HVAC Bill Insert	3,721
Email invitations to events	375

<sup>19</sup> [www.pacificpower.net/casave](http://www.pacificpower.net/casave)

## EVALUATIONS

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

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

Verification of the potential to achieve savings involves regular inspection and commissioning of equipment. The Company engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results. A summary of the inspection process is included in Appendix 1.

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

In 2015, the Company awarded a multi-year contract to evaluate the Company's energy efficiency programs for all states. The contract was awarded through a competitive bid process. For California, both the Home Energy Savings and *wattsmart* Business program will be evaluated in 2017 and 2018, respectively.

Previous program evaluation reports are available at [www.pacificcorp.com/es/dsm/california.html](http://www.pacificcorp.com/es/dsm/california.html)